

ASSESSMENT REPORT

ON

- a) East Group &
- b) West Group Mineral Claims

Atlin, M.D.

NTS 114P/12

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**10,946**

T.E. Chandler

October 6, 1982

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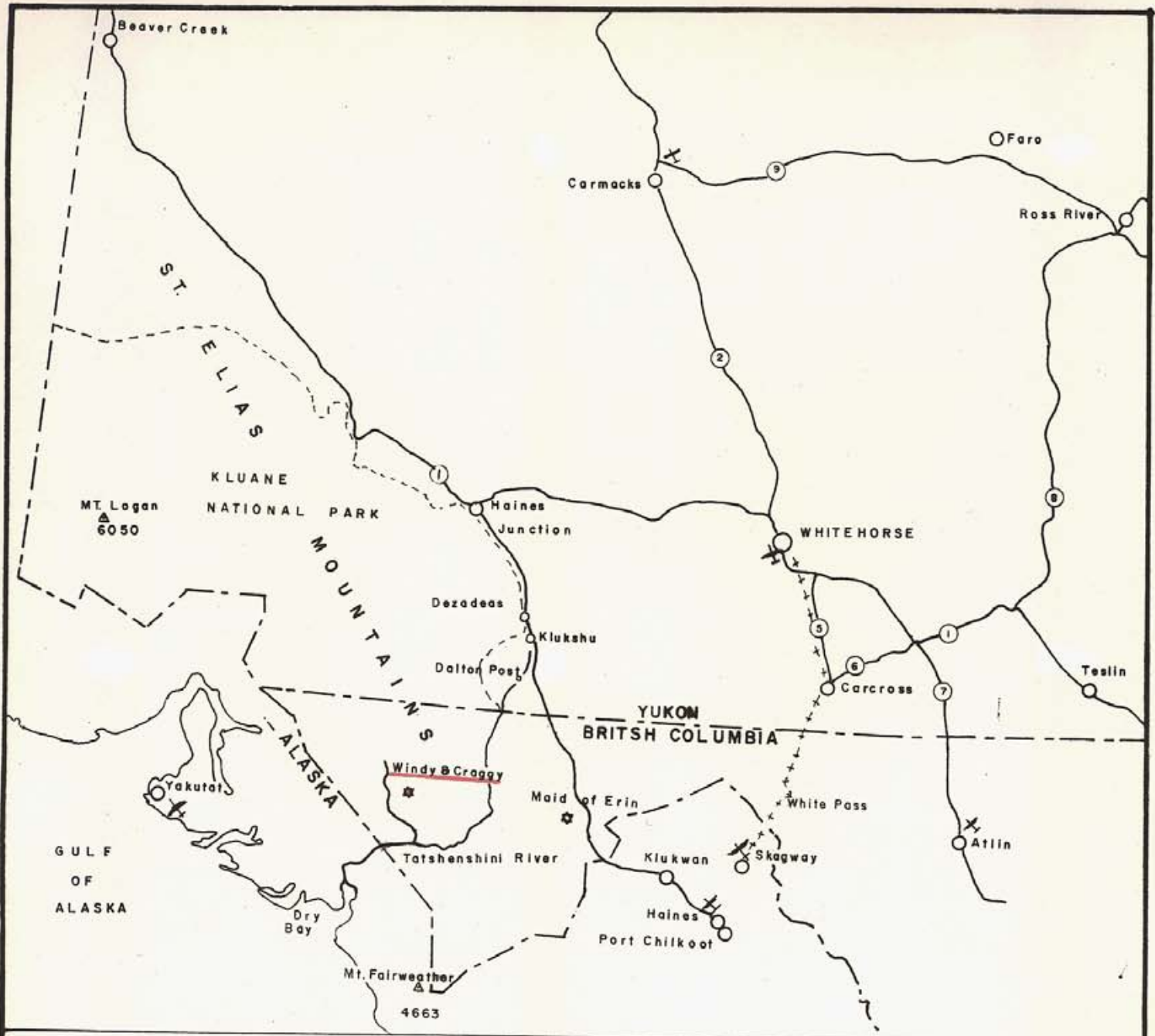
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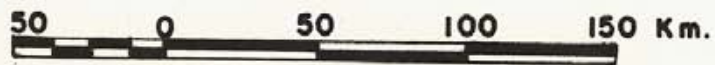
## APPENDICES

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### INDEX MAP

### BRITISH COLUMBIA & YUKON



SCALE 1:2,500,000

## INTRODUCTION

The East Group Mineral Claims consist of the Windy #2, #4 and #6 two-post Located Claims and the W.C. 2, 3, W-C-9, W-C-14, W-C-15 and W-C-16 Modified Grid Located Claims, as per Fig. 052-82-2.

The West Group Mineral Claims consist of the Windy #1, #3, #5, #7 and #8 and the Craggy #1, #2 and #4 two-post Located Claims and the W.C. 1, W-C-7 and W-C-8 Modified Grid Located Claims as per Fig. 052-82-3.

The zone of recent drilling is located on a NW striking ridge between two glaciers 28km due north of the junction of the Alsek and Tatshenshini Rivers in the extreme NW corner of British Columbia. It is accessible by helicopter from the Haines Cut-Off Road (66km) or Whitehorse (200km) or by float plane to the base camp at Tats Lake and thence by helicopter 12km north to the property at elevations 1550 to 2000m. There is no road or trail access to the drilling operation site. Daily crew changes, equipment supply and drill moves were completely dependent on helicopter support throughout the programme.

Financing for the project, administered by Falconbridge Limited, was made available through a Drilling Fund with authorized expenditures being totally directed to drill-related costs. A total of 1363.7m of diamond drilling was completed in the period July-August, 1982 at a total cost exceeding \$523,000.00 or \$383/m. Apportionment of expenditures has been made on an average cost/meter basis for assessment credit distribution as detailed in the accompanying Statement of Expenditures.

## GENERAL GEOLOGY

The Windy Craggy sulphide deposit consists of a large essentially conformable massive body within altered, chloritized basic volcanics, cherty tuffs and minor argillaceous meta-sediments at or in close proximity to a regional contact between a massive

GENERAL GEOLOGY (contd)

suite of intermediate to basic, occasionally pillowed, volcanics and an extensive sequence of dominantly sedimentary rocks, consisting of calcareous to non-calcareous carbonaceous argillites, minor siltstones and argillaceous limestones and intercalated lensy intermediate volcanic flows and tuffs. Due to problems of limited access, harsh climate and precipitous topography the regional geological information is quite limited especially with regard to the ages and stratigraphic relationships of the major rock-units and the nature and degree of structural complications.

Reconnaissance mapping by Campbell and Dodds of the GSC, 1979, has subdivided this portion of NW British Columbia into a series of discrete and distinct terranes separated by major NW-SE striking faults. The Windy Craggy deposit occurs within terrane 3, the largest in areal extent and forming part of the Alexandran allochthonous terrane described by Monger et al, GSC. The majority of the lithologies in this terrane have been informally lumped as the Kaskawalsh Group from tentative correlations with similar rocks described in the Kluane area of the Yukon. Subdivisions within this group consist of an extensive suite of shales, carbonates and greywackes of presumed Ordovician-Silurian age, probably correlative with the argillite sequence observed at Windy Craggy, and local accumulations of ?Cambro-Ordovician pillow basalts, flows and breccias represented by the massive volcanic suite adjacent to the Windy Craggy zone. The area as a whole is intruded by a variety of plutonic rocks ranging from Paleozoic to Tertiary in age.

Work completed on the Windy Craggy property to date has concentrated on testing the extent and character of the massive sulphide zone by means of necessarily wide-spaced drilling due to the large size of the deposit and the scarcity of suitable drilling sites in the rough topography. Surface exposure of the sulphide zone is limited to a margin of weathered sulphides and gossan along its southern contact. The major portion of the sulphide deposit occurs under an extensive snow cap and glacial ice cover at elevations ranging from 1560 to 1800 metres. From the information obtained during the drilling programmes, the sulphides occur both

GENERAL GEOLOGY (contd)

as stringer-type veins and as layered bands and thick massive horizons essentially conformable to the enclosing strata and host rocks, dipping steeply to the NE over most of its strike length. However, evidence from bedding attitudes in relation to well developed foliation and cleavage as well as some observed minor structures, suggest that the entire assemblage has been tightly folded with the sulphides occupying a synclinal axis plunging moderately to the NW. Further speculation on the exact nature of the structure of the deposit will require more detailed mapping or drilling data than presently available. The inferred strike extent of the sulphide zone from drill intercepts is over 1000 metres and is open at both ends. An inferred thickness of over 100 metres is exhibited along most of the above strike length.

Sulphide mineralogy exhibits a broad zoning variation. The major metallic minerals are pyrrhotite and pyrite with subordinate chalcopyrite and minor sphalerite. Sideritic gangue cherts and magnetite are locally abundant. Pyrrhotite is the dominant sulphide mineral in the southern portion of the zone. Holes 11-82 and 12-82 are dominantly pyritic sulphides with subordinate pyrrhotite and zones of significant sphalerite content. Both pyrite and pyrrhotite are cobaltiferous.

DRILL LOGS AND INTERPRETATION, DDH 9-82, 11-82, 12-82

Drill logs for diamond drill holes 9-82, 11-82 and 12-82 are appended to this report. Drill Hole 9-82 was continued from a depth of 174.9m where drilling had suspended in 1981 and was completed at a depth of 507.5m(1665ft). Thus a total of 332.5 metres were drilled in 1982 on this hole, all in Windy #6 Mineral Claim of the East Group. Drill hole 11-82 was completed to a depth of 616.0m(2021ft), collared on Windy #7 Mineral Claim and termin-

DRILL LOGS AND INTERPRETATION, DDH 9-82, 11-82, 12-82 (contd)

ating at depth on Windy #8 Mineral Claim, both of the West Group. Drill hole 12-82 was collared on Windy #8 Mineral Claim and terminated at a depth of 415.1m(1362ft) on Windy #7 Mineral Claim, both of West Group. A total of 1363.7m(4474ft) of drilling was completed in the period July 6 to August 11, 1982, Fig. 052-82-4 shows the location of the holes relative to the appropriate two-post claims.

The drilling contractor was Longyear Canada using 1 Longyear Fly 38 drill rig and 1 Longyear 44 rig. The Fly 38 rig was wintered over 1981-1982 for this year's programme. The Longyear 44 rig; pumping equipment, waterlines, mud + drill water additive, additional rods and sundry other drill and camp equipment were transported to the site by helicopter (E.R.A. Helicopters) at the start of the season. One Fly 38 rig was demobilized from the site at this time.

All core was transported to the Tats Lake base camp for logging and sampling. Split core samples were sent by float plane to Bondar Clegg in Whitehorse for assaying by normal assay methods. Pulps and rejects are presently stored at Bondar Clegg's lab offices in Whitehorse. The remaining split and unsplit core was transported to the Delta exploration office of Falconbridge Limited.

Dip tests on drill holes were conducted by tro-pari survey instrument but no azimuthal bearings were obtained due to the magnetic nature of the pyrrhotitic sulphides. The logs are self-explanatory and a legend is present for interpretation of the graphic log record and abbreviations used. The wireline drill method used was in Imperial measurement but the logs have been converted to the metric system. Samples however remain in Imperial measurement due to the relative advantage of using a standard 10 foot sample interval wherever possible.

STATEMENT OF EXPENDITURES

1) WAGES

1 Project Geologist

19 office days: June 1-4, 7-11, 14-18, 21-25, 1982, Contract tenders, map and field preparation, programme co-ordination

53.5 field days: June 27-July 8, July 10, July 12-28, July 29(½day), July 30-August 6, August 9-12, August 16-26, 1982: Project supervision, core logging and sampling, miscellaneous, demobilization.

21 Office days: August 27th, August 30-31, September 1-3, 7-10, 13-16, 20, 21, 23, 24, 27-29: Data assessment, core log and drill section preparation, report writing and misc.

TOTAL 93.5 days @ \$185/day

\$17,297.50

1 Surveyor/Draftsman/Camp Manager

8 office days: June 1-4, 21-25, 1982. Map and figure drafting, packing field supplies

45 field days: June 27-July 8, July 10, 13, 20-24, 27-29, July 31-August 7, August 10-12, 15-26:

Drill hole surveys, stadia surveys for topo checks, camp maintenance, field data drafting.

18 office days: August 27, August 30-31, September 1-3, 7-10, 13-17, 20, 22, 23: Map, section and figure drafting, storage of field equipment.

TOTAL 71 days @ \$152/day

\$10,792.00

1 Surveyor and Field Assistant

47 field days: June 27-July 8, July 10, 13, 20-24, July 27-Aug 7, Aug 10-13, 15-26: Core splitting and sampling, assisting surveyor.

15 office days: August 27, 30, 31, September 1-3, 7-10, 13-17: Core labelling, reboxing, storage

TOTAL 62 days @ \$61/day

\$3,782.00

1 Field Geologist

33 field days: July 13-24, 27, 29, July 31-August 7, August 10-13, 16-22. Core logging, sampling.

10 office days: September 16, 17, 20-24, 27-29. Core log and assay assessment, maps, core organization.

TOTAL 43 days @ \$85.50/day

\$3,676.50



STATEMENT OF EXPENDITURES (contd)

1 Camp Builder/Expediter

19 field days: June 24-July 3, July 5-12, 14:  
Mobilization, camp construction and set-up, fuel  
supply and equipment maintenance.

5 office days: May 31, June 1-4: Equipment  
procural, field supplies, field preparation.

TOTAL 24 days @ \$158/day \$3,792.00

1 Assistant to Camp builder/expediter

16 field days: June 27-July 12: mobilization,  
camp construction, set-up, fuel supply and  
equipment maintenance

TOTAL 16 days @ \$61/day \$976.00

1 Exploration Manager

9 field days: June 27, July 17, 18, 20-22, August  
4-5, 12: project co-ordination, supervision  
3 office days: June 3, June 4, August 9: drilling  
contract, project supervision

TOTAL 12 days @ \$285/day \$3,420.00

TOTAL.....\$43,736.00

2) DIRECT DRILLING CHARGES

Longyear Canada - July 3 to August 12, 1982 \$221,924.44

3) FUEL SUPPLY (March 15-19, 1982)

143 x 200ℓ drums JP-4  
65 x 200ℓ drums low-pour diesel      288 drums total of which  
30 x 200ℓ stove oil                      265 used for drill programme  
50 x 200ℓ Avgas  
+ Air North Otter flights to haul fuel to base camp  
  at Tats Lake  
+ Contract charges to construct ice runway on Dezadeash  
  Lake

Total cost for above is \$57,850.00 or \$200.87/drum  
Total applicable cost for drilling programme =  
\$200.87 x 265 drums = \$53,230.55

STATEMENT OF EXPENDITURES (contd)

- 4) MOBILIZATION into base camp; transport of drilling equipment to site.

E.R.A. Helicopters Ltd., Juneau, Alaska  
Bell 212 - July 5-7, 1982

TOTAL \$54,646.62

- 5) DAILY CREW AND EQUIPMENT TRANSPORT to sites  
(June 24 - August 22, 1982)

Pacific Helicopters/TransWest Helicopters  
Hughes 500D

\$97,472.56

- 6) TRAVELLING EXPENSES - Hotel and lodging, meals.  
during camp set-up and demobilization.

104 man days June 22-July 8, 1982, August 23-  
August 26, 1982.

Includes 3 one-way and 2 round-trip air fares,  
Vancouver to Whitehorse and local transport.

TOTAL \$6,330.16

- 7) FIELD EXPENSES

Pre-season Core racks, HF radio checkout & repair \$1,560.65  
May-June, 1982 Misc. Field supplies, Waterline

(2000ft) and couplings \$3,936.45

July Drilling supplies: soda, ash, mud  
Radio telephone charges  
Additional JP-4 helicopter fuel for  
mobilization  
Supply flights from Whitehorse to  
Base Camp \$4,082.61

Aug & September Supply flights Whitehorse to Base  
Camp  
Radio telephone charges  
Fuel supply truck rentals  
Camp demobilization truck rentals  
Drilling supplies: mud, soda, ash,  
polymer additives) \$12,218.07

- 8) CAMP OPERATION EXPENSES (June 20 - August 23, 1982)

Equipment Rental charges (generators, stove  
freezers, etc) \$7,290.00

Camp Equipment and maintenance (lumber, electrical  
supplies, hardware, plumbing) \$2,316.86

Longyear charges for board (applicable to drilling  
programme) \$3,960.00

Communications (HF radio rental, B.C. & N.W. Tel  
charges) \$1,587.99

Propane fuel supplies \$1,780.60

Misc. \$117.35

STATEMENT OF EXPENDITURES (contd)

9) ASSAY CHARGES - Bondar Clegg

Multi-element assay charges, 891 analyses \$6,972.00

TOTAL APPLICABLE EXPENDITURES.....\$523,162.91

APPLICATION OF EXPENDITURES

Total drill related costs are detailed in the Statement of Expenditures. A total of 1363.7 metres were drilled in the programme at a total cost of \$523,162.91. The proportional cost per metre of drilling is calculated as slightly more than \$383.00. This is approximately \$29/metre higher than experienced in the 1981 drilling programme, attributable to normal inflationary increases for supplies and drilling services. The apportioning of the expenditures for assessment credit purposes has utilized the average cost per metre as the most reasonable means of cost distribution for a toally drill-oriented programme. Reference to Figures 052-82-2 and 052-82-3 showing the relevant claim groupings as well as Fig. 052-82-4, the drill hole location plan, will aid the following explanation for application of costs:

TO BE APPLIED TO EAST GROUP

DDH 9-82: as per section 052-82-5 this hole was continued in 1982 from a depth of 175m(574ft) through to termination at 507.5m (1665ft) representing a total of 332.5m(1091ft) of drilling in 1982 all within Mineral Claim Windy #6 of the East Group. This drilling was carried out in the period July 10-26, 1982.

Applicable Costs to East Group: 332.5m @ \$383/m = \$127,347.50

TO BE APPLIED TO WEST GROUP

DDH 11-82: as per section 052-82-6 a total of 616.0m(2021ft) were drilled in this hole totally within Mineral Claims Windy #7 and Windy #8 of the West Group, over the period July 10-Aug.6, 1982.

Applicable Costs to West Group: 616.0m @ \$383/m = \$235,928.00

APPLICATION OF EXPENDITURES (contd)

TO BE APPLIED TO WEST GROUP

DDH 12-82: as per section 052-82-7 a total of 415.1m(1362ft) were drilled in this hole totally within Mineral Claims Windy #7 and Windy #8 of the West Group, over the period Aug.1-20, 1982.

Applicable Costs to West Group: 415.1m @ \$383/m = \$158,983.30

TOTAL APPLICABLE TO WEST GROUP \$394,911.30

TOTAL OF ALL APPLICABLE COSTS FOR EAST & WEST \$522,258.80



FALCONBRIDGE LIMITED

6415 - 64th Street, Delta, B.C., Canada V4K 4E2

Tel. (604) 946-0441

Telex 04-357583

Chief Gold Commissioner  
Ministry of Energy, Mines  
and Petroleum Resources  
Parliament Buildings  
Victoria, B.C.  
V8V 1X4

STATEMENT OF QUALIFICATIONS

Dear Sir,

This is to state that I am a geology graduate of Carleton University, Ottawa, Ontario (B.Sc. Hons. 1975), and have worked for Falconbridge Limited as a geologist since 1976.

T. Heah, the geologist in charge of portions of the core logging on the 1982 Windy Craggy programme is a geology graduate of the University of British Columbia (B.Sc. Hons. 1982) and worked under my supervision.

Yours truly,  
FALCONBRIDGE LIMITED

A handwritten signature in cursive script, appearing to read 'T.E. Chandler'.

T.E. Chandler  
Project Geologist

TEC/ps

APPENDIX "A"



COSTS PERTAIN TO DRILL HOLE 9-82, TOTAL

**C. DRILLING**

(Details in report submitted as per section 8 of regulations.)  
 (The itemized cost statement must be part of the report.)

\$121,-

**D. GEOLOGICAL, GEOPHYSICAL, GEOCHEMICAL**

(Details in report submitted as per section 5, 6, or 7 of regulations.)  
 (The itemized cost statement must be part of the report.)  
 (State type of work in space below.)

TOTAL OF C AND D

\$127,347.50

Who was the operator (provided the financing)?

Name Falconbridge Limited

Address 6415 - 64th Street

Delta, B.C. V4K 4E2

**Portable Assessment Credits (PAC) Withdrawal Request**

AMOUNT

Amount to be withdrawn from owner(s) account(s):

Name of Owner

(May be no more than 30 per cent of value of the approved work submitted as assessment work in C and (or) D.)

1. ....
2. ....
3. ....
4. ....

TOTAL WITHDRAWAL

NIL

TOTAL OF C AND (OR) D PLUS PAC WITHDRAWAL

\$127,347.50

I wish to apply \$ 73,600.00 of this work to the claims listed below.

(State number of years to be applied to each claim, its month of record, and identify each claim by name and record no.)

W.C.2 [801(9)] 5 years x 4 units x \$200 = \$4,000.00

W.C.3 [802(9)] 5 years x 20 units x \$200 = \$20,000.00

W-C-14[1596(1)] 6 years x 20 units x \$200 = \$24,000.00

W-C-15[1597(1)] 4 years x 18 units x \$200 = \$14,400.00

W-C-16[1598(1)] 4 years x 14 units x \$200 = \$11,200.00

Value of work to be credited to portable assessment credit (PAC) account(s).

(May only be credited from the approved value of C and (or) D not applied to claims.)

Name

AMOUNT

In owner(s) name.

1. Falconbridge Limited

\$53,747.50

In operator(s) name (party providing the financing).

1. ....
2. ....
3. ....

*James Handley*  
 (Signature of Applicant)

October 8, 1982





COSTS PERTAIN TO DRILLING DRILL HOLES 11-82 and 12-82 TALLING 1031.1m @ \$383/metre

<b>C. DRILLING</b> (Details in report submitted as per section 8 of regulations.) (The itemized cost statement must be part of the report.)	COST
	\$394,911.30
<b>D. GEOLOGICAL, GEOPHYSICAL, GEOCHEMICAL</b> (Details in report submitted as per section 5, 6, or 7 of regulations.) (The itemized cost statement must be part of the report.) (State type of work in space below.)	
TOTAL OF C AND D	
	\$394,911.30

Who was the operator (provided the financing)?

Name Falconbridge Limited

Address 6415, 7. 64th Street  
Delta, B.C.

Portable Assessment Credits (PAC) Withdrawal Request		AMOUNT
Amount to be withdrawn from owner(s) account(s):		
	Name of Owner	
(May be no more than 30 per cent of value of the approved work submitted as assessment work in C and (or) D.)	1. ....	
	2. ....	
	3. ....	
	4. ....	
TOTAL WITHDRAWAL		NIL
TOTAL OF C AND (OR) D PLUS PAC WITHDRAWAL		\$394,911.30

I wish to apply \$ 52,800.00 of this work to the claims listed below.

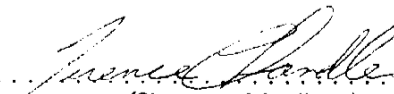
(State number of years to be applied to each claim, its month of record, and identify each claim by name and record no.)

Windy #1[3728(9)] 9 yrs x 1 unit x \$200=\$1800 Windy #3[3726(9)] 9 yrs x 1 unit x \$200=\$1800.00  
 Windy #5[3728(9)] 9 yrs x 1 unit x \$200=\$1800 Windy #7[3730(9)] 9 yrs x 1 unit x \$200=\$1800.00  
 Windy #8[3731(9)] 9 yrs x 1 unit x \$200=\$1800 Craggy#1[3732(9)] 9 yrs x 1 unit x \$200=\$1800.00  
 Craggy#2[3733(9)] 9 yrs x 1 unit x \$200=\$1800 Craggy#4[3735(9)] 9 yrs x 1 unit x \$200=\$1800.00  
 W.C. 1 [800(9)] 6 yrs x 20 units x \$200=\$24000 W-C-7 [1529(8)] 3 yrs x 8 unitsx \$200=\$4800.00  
 W-C-8 [1530(8)] 3 yrs x 16 units x \$200=\$9600.00

Value of work to be credited to portable assessment credit (PAC) account(s).

(May only be credited from the approved value of C and (or) D not applied to claims.)

		Name	AMOUNT
In owner(s) name.	1.	<u>Falconbridge Limited</u>	<u>\$342,111.30</u>
	2.	.....	
	3.	.....	
In operator(s) name (party providing the financing).	1.	.....	
	2.	.....	
	3.	.....	

  
 (Signature of Applicant)  
 October 8, 1982



FALCONBRIDGE LIMITED

6415 - 64th Street, Delta, B.C., Canada V4K 4E2

Tel. (604) 946-0441

Telex 04-357583

Chief Gold Commissioner  
Ministry of Energy Mines and  
Petroleum Resources  
Parliament Buildings  
Victoria, B.C.  
V8V 1X4

October 8, 1982

Dear Sir,

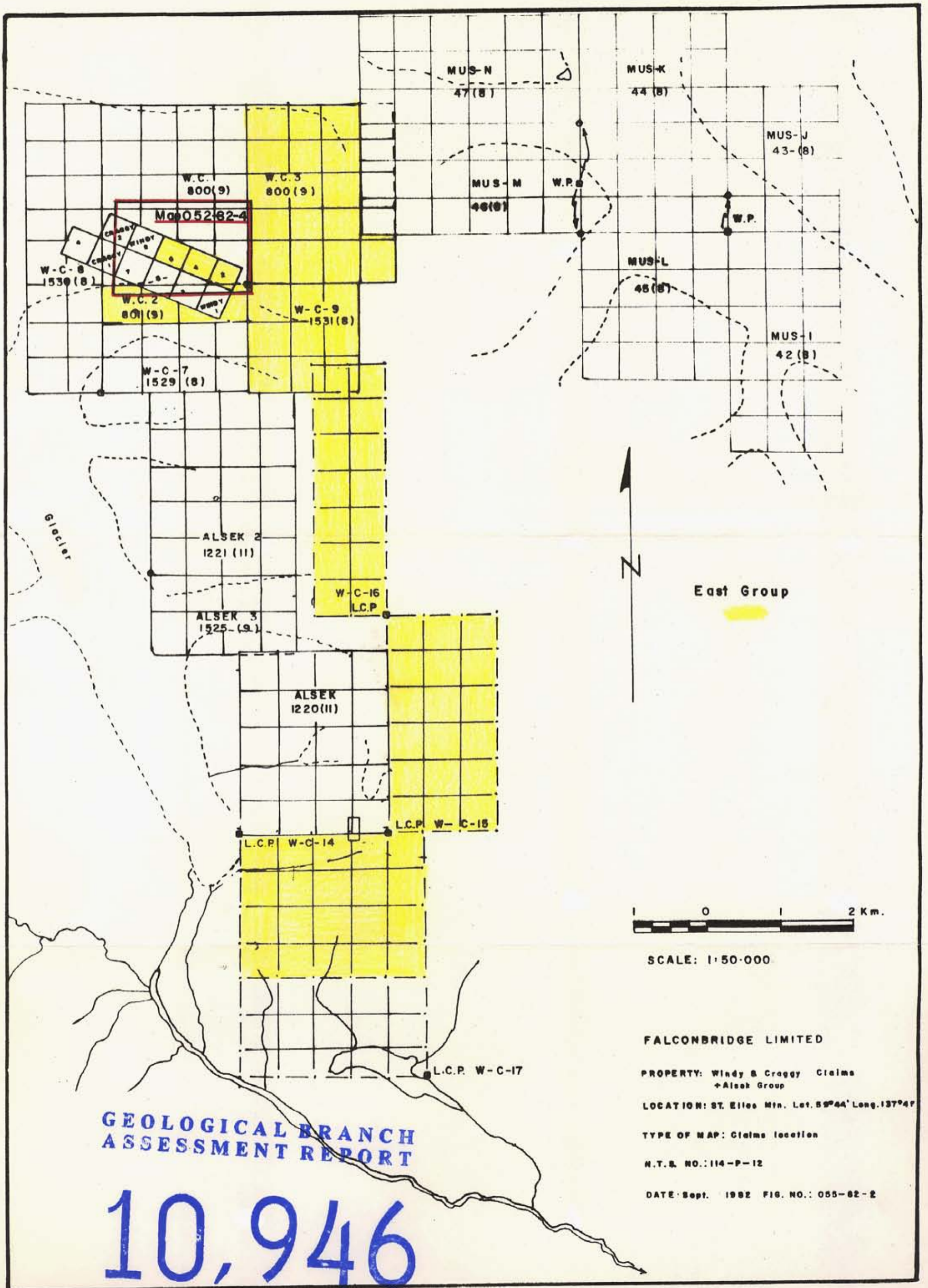
Enclosed are two copies of an Assessment Report on the East and West Group Mineral Claims in the Atlin Mining Division. The assessment credits applied for refer to work completed in the 1982 drilling programme. You will note that a minor change in requested assessment credits has been made with respect to Claims W-C-14, W-C-15 and W-C-16 of the East Group Mineral Claims since the original filing of the Statement of Exploration and Development in Atlin on August 23, 1982. In that filing 5 years of assessment credit was to be applied to each of the above claims. The Statement of Exploration and Development included in this report requests instead that 6 years of assessment credit be applied to W-C-14 and 4 years each to W-C-15 and W-C-16. This change results in a net \$2,400.00 reduction in costs being applied to the above claims. As the required filing fees were paid on the original work credit application we would request that the Ministry refund the excess payment of \$120.00 or alternatively credit the Falconbridge PAC account with that amount.

In addition total applicable expenditures have been calculated and tabulated since the original August 23rd filing in order that excess expenditures be credited to Falconbridge Limited's PAC account.

Yours truly,  
FALCONBRIDGE LIMITED

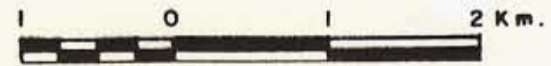
T.E. Chandler  
Project Geologist

TEC/ps



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**10,946**



SCALE: 1:50,000

FALCONBRIDGE LIMITED

PROPERTY: Windy & Craggy Claims  
+ Alsek Group

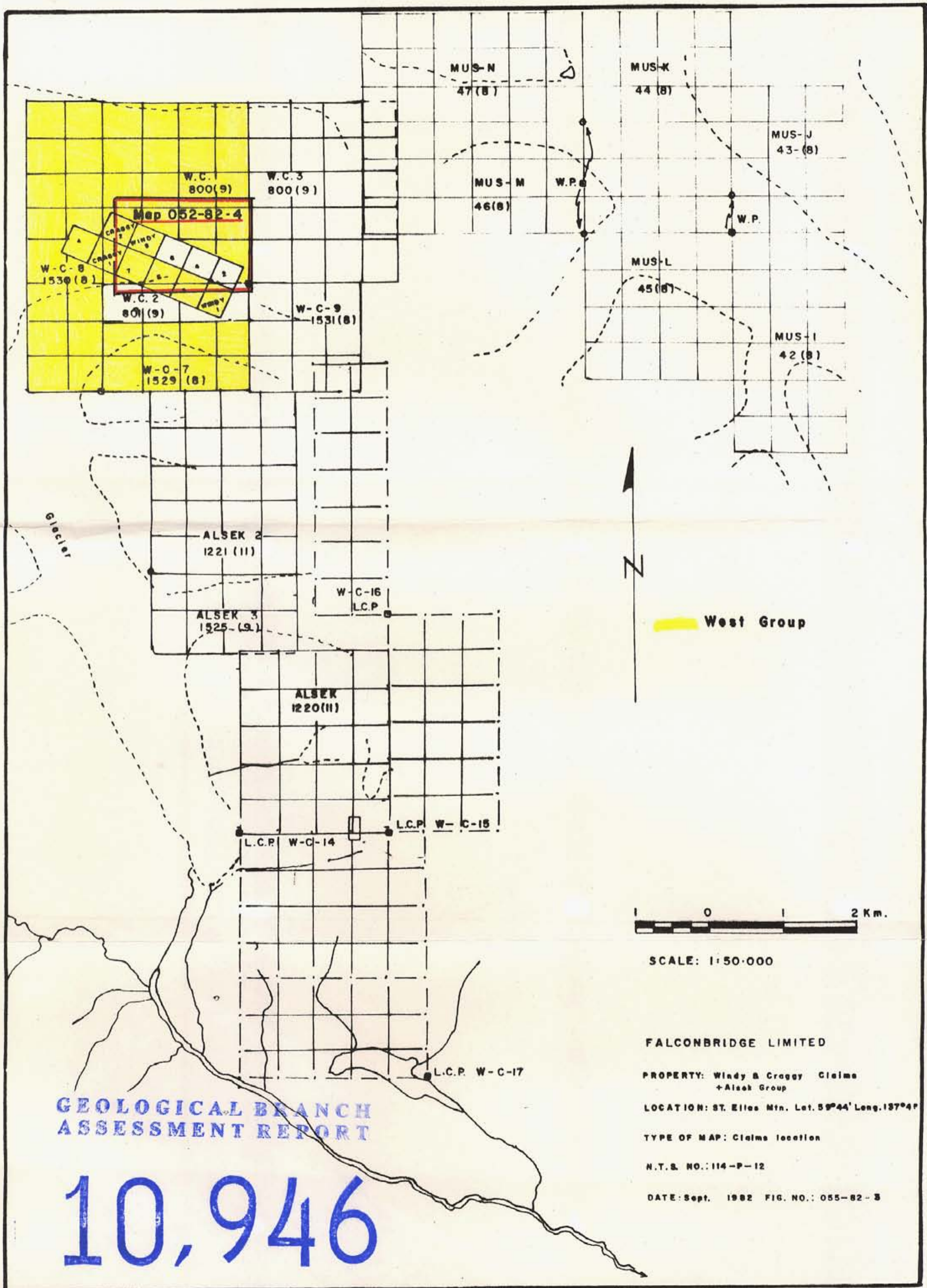
LOCATION: ST. Elias Mtn. Lat. 59°44' Long. 137°47'

TYPE OF MAP: Claims location

N.T.S. NO.: 114-P-12

DATE: Sept. 1982 FIG. NO.: 055-82-2





**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**10,946**

SCALE: 1:50,000

FALCONBRIDGE LIMITED

PROPERTY: Windy & Craggy Claims  
+ Alsek Group

LOCATION: ST. Elias Mtn. Lat. 59°44' Long. 137°41'

TYPE OF MAP: Claims location

N.T.S. NO.: 114-P-12

DATE: Sept. 1982 FIG. NO.: 055-82-3

# DRILL HOLE RECORD

FALCONBRIDGE LIMITED

<b>Caller</b>	<b>Inclination</b>	<b>Bearing</b>	<b>PROPERTY WINDY CRAGGY</b>	<b>Length 507.5m (1665ft)</b>	<b>HOLE No: 9/82</b>
914 M (300')	-58° 45'	N48° 24'	<b>Location Section G-G'</b>	<b>Hor. Comp. / Vert. Comp.</b>	<b>Page# 1 of 8</b>
152.4 M (500')	-54°		<b>Elevation 1812.0m</b>	<b>Bearing</b>	<b>Sheet 1 of 8</b>
243.8 M (800')	-54°		<b>Coordinates 10,466.70 N</b>	<b>Beam July 10 1982 / Completed July 26 '82</b>	<b>Logged by T. Chandler</b>
372.5 M (1200')	-53°		<b>9,656.01 E</b>	<b>Core size NQ/BQ / Recovery 89 %</b>	<b>Sampled by T. Chandler, T. Heah</b>
365.8 M (1200')	-53°				<b>Driller Fly 38 Rig #2</b>
443.8 M (1456')	-48°				
467.7 M (1500')	-47°				

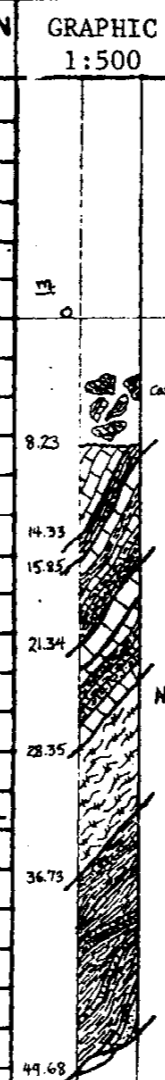
DEPTH - metres (ft)		RECOV'Y		DESCRIPTION	INTERSECTION ANGLE	GRAPHIC 1:500	SAMPLES			ASSAYS			COMPOSITES		
FROM	TO	ROD	CORE				No.	From	To	Fi					
NOTE:															
Hole drilled to 574ft in 1981, suspended due to freezing water supply and broken BQ core barrel in hole. Re-entered July 11, 1982 and continued to completion depth of 507.5m (1665ft). 0-574ft (174.9m) RELOGGED															
0	28.35	-	48%	Limestone and interbedded argillite, siltstone											
0	8.23	-	20%	Casing. No core. Minor mud and argillite, limestone fragments											
(0	27)														
8.23	14.33	-	60%	Light to dark gray limestone. Core is shattered, extremely broken. Massive limestone sections show blocky fracture. Qtz, calcite fill fractures with occasional iron oxide crusts & films. Rare py as dissem. small blebs in limestone & suggestion of weakly developed foliation. Occ. laminae of more siliceous clastics at 10° to core axis.	Bedding 10°										
14.33	15.85	-	60%	Dark gray limestone and shale/argillite. Shattered broken core with nmrs. quartz-calcite veins and crusts, films and vuggy linings of iron oxides.											
(47	52)														
15.85	21.34	-	60%	Crushed pebbly zone of mixed limestone and shale as above but limestone is more massive & is recovered as short core lengths amidst fragmented shale debris. Nmrs calcite veinlets and fracture fillings ± quartz.											
(52	70)														
21.34	28.35	-	60%	Light gray limestone similar to above but less massive, more broken generally with occ. rusty coatings on fractures. Minor argillite and siltstone occur as bedded bands 3mm to 5mm thick at 35°-40° to core axis. Hairfine calcite veinlets.	Bedding 35°-40°										
(70	93)														
28.35	36.73	-	80%	Pale felsic Dyke or Flow											
(93	120.5)			Gray-green massive felsic dyke (?) or flow. Strongly fractured with occ. rusty iron oxide crusts on joint planes. Faint schistosity developed with muscovite/sericite flakes. Composed primarily of qtz, plagioclase and micas.											
36.73	68.58	16%	54%	Mixed argillite and calcareous argillite with interbedded limestones, siltstones and f.g. tuffs.											
36.73	49.68	33%	50%	Dark gray to black calcareous argillite and f.g. argillaceous limestone.											
(120.5	163)			Light gray bands of purer limestone occur sporadically with some limey siltstone layers. The argillites bear much py as subhedral blebs and aggregates, crosscutting veinlets and f.g. layers or laminae parallel to bedding. Some py laminae are discontinuous and lensoid, others are offset by the numerous shears and fractures. Bedding is parallel to foliation at 25-30° to core axis but occasionally the bedding core angle drops to c. 10°.	Bedding 25°-30° occ ± 10°										
36.73 - 42.37 (120.5 - 139ft) Very broken with much iron oxides in crusts on open fractures.															

**GRAPHIC LOG LEGEND**

- Limestone
- Argillaceous limestone
- Silty limestone
- Siltstone
- Argillite / Silty argillite
- Intermediate volcanic flow/tuff
- " , porphyritic
- " , cherty or silicified
- Chert, cherty tuff or breccia
- Sulphides

**ABBREVIATIONS and SYMBOLS**

- po pyrrhotite
- py pyrite
- cp chalcopyrite
- occ. occasional
- nmrs. numerous
- qtz. quartz
- dissem. disseminated
- RQD Rock Quality Description
- NQ } Core size
- BQ } Core size
- F Fault or Shear Zone.



**GEOLOGICAL BRANCH ASSESSMENT REPORT**

**10,946**









# DRILL HOLE RECORD

FALCONBRIDGE LIMITED

Inclination	Bearing	PROPERTY	Length	HOLE No: 9/82
Collar		Location	Hor. Comp. / Vert. Comp.	Sheet of
		Elevation	Bearing	Logged by
		Coordinates	N E	Sampled by
			Beam / Completed	Driller
			Core size / Recovery %	

FOOTAGE		RECOV'Y	DESCRIPTION	INTERSECTION ANGLE	GRAPHIC 1:500	SAMPLES			ASSAYS		COMPOSITES			
FROM	TO	RQD Core				No.	From	To	Fr	Cu%	Co%			
161.24	166.73		volcanics.											
CONTD.			Nmrs. irregular veinlets of py with po and rare cp.											
			165.66m (543.5'): Large Qtz-calcite vein with coarse 2cm blebs of po.											
166.73	206.35	32% 84%	Mildly chloritic, moderately altered foliated volcanics with occasional slick 'n' sided shears. Nmrs irregularly oriented veinlets of sulphides at 15-30cm intervals. Veins average .5 to 1cm in thickness. At 166.73 a large bleb of po occurs rimmed by cp. F.g. py appears alone in f.g. seams & rarely with po. Cp is usually associated with po as f.g. intergrowths, rims & interstitial grains..											
(547	677)		179.53(589') "Silicified volcanics with abundant po and subordinate cp in Qtz ± calcite veins.											
			180.9 - 181.36m: Clay development, blocky fracturing: Fault? with moderate cp and po at end.											
			190.8(626'): 30cm zone of strong fracturing, shears, chlorite ± clay alteration. Possible fault.											
			199.34 - 200.86: Fault zone											
			201.47: Fault											
			203.61 - 205.13: Fault. Intensely fractured, extremely chloritized, sheared and gouged. Minor Qtz-calcite-po-py-cp veins											
206.35	236.83	58% 95%	Silicified volcanics, cherts, altered chloritized volcanics and stringer sulphides											
206.35	220.37	52% 91%	Light green to green volcanics with cherty layers & silicified zones. Volcanics are moderately chloritized and foliated. Banded & stringer sulphides occur throughout the rock and comprise approx. 20-25%, mostly po with minor py & cp. Sulphides are most abundant below 213.36 (700'). Some irregular Qtz-calcite veins occur. Foliation angle is approx. 35°.	Foliation 35°			78340	700	710	10'	0.41	0.034		
(677	723)						41	710	720	10'	0.19	0.022		
							42	720	723	3'	0.20	0.012		
220.37	228.6	57% 98%	M.g. dark to light green, massive, chloritized volcanics (flows)?, probably andesitic. Generally low in sulphides. Minor dissem. po blebs & rare po-py veins. Traces of cp with po. Approximately 5% po overall.											
(723	750)													
228.6	236.83	66% 99%	Variably chloritized altered volcanics with numerous cherty bands (silicified volcanics or cherty tuffs?). Veins, stringers and patchy segregations of po-rich sulphides. Very subordinate py and cp. Sulphides approximately 35-40% overall. Sulphide mineralogy: 80%po 15%py 5%cp. Irregular Qtz ± calcite veins			78343	750	760	10'	0.55	0.072			
(750	777)					44	760	770	10'	0.47	0.056			
						45	770	780	10'	0.51	0.076			
236.83	267.16	84% 100%	Massive Sulphides											
(777	876.5)		Massive to semi-massive sulphides (75% overall) in variably silicified and chloritized volcanics with cherty breccia fragments. Po dominates over py & cp. Sulphide mineralogy approx: 85%po, 10%py & 5%cp overall but short sections of py-rich sulphides are observed. Numerous calcite and Qtz veins crosscut the core. Cg. sphalerite occurs in Qtz/calcite vein in py-rich sulphides at 251.76m (826'). Deformed remnant banding in po occurs at 35°-40° to core axis.	Sulphide banding 35-40°		46	780	790	10'	0.84	0.11			
						47	790	800	10'	0.72	0.084			
						48	800	810	10'	1.44	0.086			
						49	810	820	10'	1.10	0.11			
						50	820	830	10'	0.47	0.090			
						51	830	840	10'	0.58	0.074			
						52	840	850	10'	0.22	0.042			
						53	850	860	10'	0.57	0.062			
						54	860	870	10'	0.30	0.090			
						55	870	880	10'	0.28	0.066			



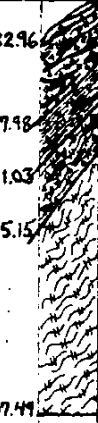




# DRILL HOLE RECORD

FALCONBRIDGE LIMITED

Color	Inclination	Bearing	PROPERTY	Length	HOLE No.	9/82	Page # 8 of 8
			Location	Hor. Comp.	/ Vert. Comp.	Sheet	of
			Elevation	Bearing		Logged by	
			Coordinates	N	Begin	/Completed	Sampled by
				E	Core size	/Recovery %	Driller

FOOTAGE		RECOV'Y		DESCRIPTION	INTERSECTION ANGLE	GRAPHIC 1:500	SAMPLES			ASSAYS		COMPOSITES		
FROM	TO	ROD	Core				No.	From	To	Ft	Cu%	Co%		
482.96 (1584.5)	487.98 (1601)	46%	96%	Mixed brecciated green chloritic volcanics & light green to gray chert(chert dominates). Some of the chert may be bleached & silicified altered volcanics. Sulphides total 35% as stringers & semi-massive concentrations. Po dominates but cp is fairly abundant as fracture fillings & at the margins of cherty breccia fragments. Cp 8-12%.			7843	1590	1600	10	1.400	0.054		
487.98 (1601)	507.49 (1665)	40%	94%	Mostly chloritized foliated volcanics with minor silicified sections or cherts plus possible argillite.										
487.98 (1601)	491.03 (1611)	22%	89%	Dark gray to black, sheared, silicified argillite(?) Strongly fractured & broken. Disseminated blebs & scattered veinlets of po,py,cp (15% overall). Cp 5-6% as c.g. blebs.			32	1600	1610	10	2.720	0.016		
491.03 (1611)	495.15 (1624.5)	10%	93%	Light green to gray cherts & silicified chloritic volcanics cut by stringers pods & disseminations of po + cp. Chloritic shear planes are abundant. Fractured & blocky core. Sulphides total 10-15%.			33	1610	1620	10	2.480	0.016		
495.15 (1624.5)	507.49 (1665)	55%	96%	Massive but foliated, f.g. highly chloritized light green volcanics(?) Very minor sulphides except for sporadic quartz veins with disseminated po. Some very minor disseminated po grains through the rock. Less than 2-5% sulphides overall.			34	1620	1630	10	0.110	0.088		
				E.O.H. 507.49m (1665')										

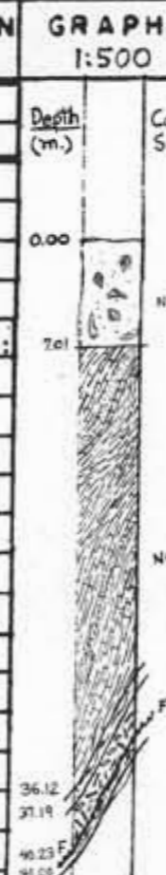


# DRILL HOLE RECORD

FALCONBRIDGE LIMITED

Inclination Collar -54°	Bearing N58°E	PROPERTY Windy Craggy	Length 616m (2021Fr)	HOLE No: 11-82
Borehole surveys listed at end of log		Location Section I-I	Hor. Comp. / Vert. Comp.	Sheet of
		Elevation 1866m	Bearing N 58° E	Logged by T. Heah
		Coordinates 10,572.02m 9,451.56	Begin July 10/82 / Completed Aug. 6/82	Sampled by T. Heah/P. Andexer/T. Chandler
			Core size NQ/BQ / Recovery 38 %	Driller Longyear 44 Rig #1

DEPTH metres FROM TO	RECOV'y RQD, Core	DESCRIPTION	INTERSECTION ANGLE	GRAPHIC 1:500	SAMPLES			ASSAYS				COMPOSITES							
					No.	From	To	Ft											
0 (0	139.60 458')	53% 88%																	
<p>Argillites, siltstones, calcareous argillites and argillaceous limestones with occ. sections of interbedded volcanic flows/tuffs.</p>																			
0 (0	7.01 23')																		
<p>Casing (NW). Fragmented core - mostly black argillite with calcite stringers and veins.</p>																			
7.01 (23	36.12 118.5)	76% 93%																	
<p>Black calcareous argillite with thinly interbedded grey calcareous siltstone and argillaceous limestone. The black calcareous argillite dominates as a v.f.g. to aphanitic schistose rock with thin (1mm to 1cm) laminae/beds of grey calcareous siltstone and argillaceous limestone, occurring both in continuous beds and as elongated lensoids. Py occurs throughout but is most abundant within the thin bedded siltstones and limestones. The py occurs as disseminated f-m.g. elongate blebs (up to 3mm long axis) paralleling schistosity (which parallels bedding). Minor py occurs as spheroids. Total pyrite content is 10%. Calcite ± py veins are common both parallel and crosscutting the schistosity, widths 0.5-3mm. Minor slip planes and fractures are observed throughout with highly variable attitudes. Most fracture/joint planes are coated with iron oxides.</p> <p>Below 9.75m po is observed both disseminated &amp; in cross-cutting veinlets up to 10% in places. Most abundant in calcareous siltstones which increase in bedding frequency &amp; thickness. Po is slightly coarser grained than the py but is also elongated // foliation.</p> <p>10.1-10.4m Possible truncated cross beds &amp; channel fillings in finely interbedded argillite and siltstone</p> <p>Below 15.24m: calcite-filled tension gashes common.</p> <p>15.85-16.46m: Graded bedding, truncated cross-bedding &amp; channel fillings</p> <p>Below 26.52m: Calcite veins &amp; stringers more abundant as well as fibrous gypsum in hair-fine veinlets &amp; stringers, fibers, vein walls. Blocky fracturing, jointing &amp; iron oxide coatings more abundant.</p>																			
36.12 (118.5	37.19 122)	0% 62%																	
<p>Dark green, m.g. tuff. Strongly fractured with limonitic coatings on fracture planes. Chlorite aggregates pseudomorphous after pyroxene(?) throughout. Calcite veins common at irregular attitudes (to 2mm wide). Apparent silicification with green chert/chalcedony bands &amp; veins up to 2cm thick. Py present as fine disseminated grains to 5%.</p>																			
37.19 (122	40.23 132)	11% 66%																	
<p>Hornblendite (gabbro?) dyke. Dark green to black, m.g. unfoliated but fractured. Probably originally hornblende &amp; plagioclase. Now altered to calcite, epidote chlorite ± clays with remnant altered hornblendes. Soft &amp; friable.</p>																			
40.23 (132	41.00 134.5)	7% 63%																	
<p>Dark green, chloritized tuffs(?) as previous: 36.12-37.19. First 30cm is extremely sheared and broken - probable fault or shear zone.</p>																			



**GRAPHIC LOG LEGEND**

[Pattern]	Limestone
[Pattern]	Argillaceous Limestone
[Pattern]	Silty Limestone
[Pattern]	Siltstone
[Pattern]	Argillite
[Pattern]	Calcareous Argillite
[Pattern]	Intermediate volcanic flow/tuff
[Pattern]	" , porphyritic
[Pattern]	" , cherty or silicified
[Pattern]	Chert, silicified breccia
[Pattern]	Gossan
[Pattern]	Sulphides

**ABBREVIATIONS and SYMBOLS**

po	pyrite
py	pyrite
cp	chalcopyrite
occ.	occasional
nmrs.	numerous
qtz.	quartz
dissem.	disseminated
RQD	Rock Quality Description
F	Fault or Shear Zone

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

10,946





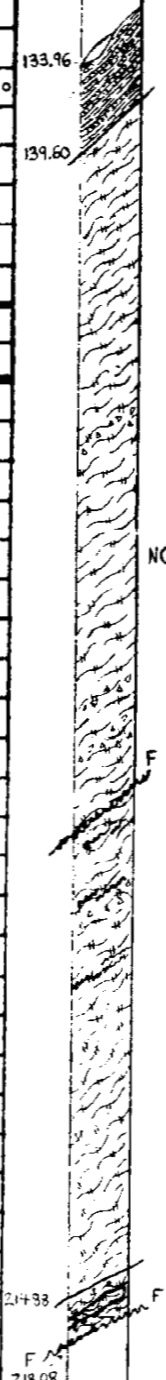


# DRILL HOLE RECORD

FALCONBRIDGE LIMITED

Category	Inclination	Bearing	PROPERTY	Length	HOLE No. 11-82	Page# 4 of 12
			Location	Hor. Comp. / Vert. Comp.	Sheet of	
			Elevation	Bearing	Logged by	
			Coordinates	N Beam / Completed	Sampled by	
				E Core size / Recovery %	Driller	

DEPTH in metres (ft)		RECOV'Y	DESCRIPTION	INTERSECTION ANGLE	GRAPHIC 1:500	SAMPLES			ASSAYS			COMPOSITES		
FROM	TO	RQD				Core	No.	From	To	Ft				
119.48	133.96		CONTINUED FROM PAGE 3											
			blebs & occ. euhedral crystals up to 4mm. From 126.64 to 128.63m py forms conformable laminae & beds up to 5cm in thickness. Some soft sediment loading of py into calcareous argillite. Deformed py layers up to 1cm thick also occur between 131.37 & 132.28m. Minor spheroidal py blebs observed.	Bedding at 131.50m=20°										
133.96	139.60	50%	Grey f.g. argillaceous limestone beds & rounded to ovoid "boudinaged" lenses suspended in v.f.g. black calcareous argillite. Minor thin beds of calcareous siltstone. Py occurs as cross cutting veinlets, linear seams of spheroidal blebs parallel to bedding & as conformable thin beds (135.33-135.94). The lensy character of the limestone becomes less pronounced, more uniformly bedded with depth.	Bedding=40°										
(439.5	458)	95%												
139.60	218.08	66%	Massive grey-green tuffs grading into more altered chloritized tuffs & flows bearing stringer sulphides.											
(458	715.5)	98%												
139.60	214.88	67%	Sequence of massive, f.g.-m.g. grey-green volcanic tuffs & possible flows. Slightly chloritized with tendency to increasing chlorite content with depth. Mottled texture resulting from patchy chlorite & calcite-replacement alteration. Suggestions of original crystals and/or rock fragments in f.g. matrix now replaced by calcite ± chlorite. Contact with preceding sediments is sharp & bears a thin band of massive po. Py occurs as <1% finely disseminated v.f.g. blebs in tuff & within py-chalcedony or py-calcite veinlets. Marked chloritization is observed around such veinlets with py often forming a vein selvage & a f.g. disseminated envelope in the chlorite alteration envelope. cf. 176.78-176.94m, 177.39-177.70m, 178.31-178.46m, 180.54-180.75m. Below 180.75m chloritization around calc-qtz-py veining becomes increasingly common. Some silicification of volcanics in areas of more intense veining. Minor dissem. po & rare cp associated with some veins. Strong fracture zones occur at 184.1-184.71 (fault zone?), 185.17-185.62m, 189.28-189.59m and 193.85-194.46.											
(458	705)	98%												
214.88	218.08	41%	Dark green, v.f.g. chloritized & occasionally silicified andesitic flows(?). Vesicular patches filled with chlorite possibly after pyroxene. Rusty coated fractures & numerous Qtz ± calcite veins up to 2.5cm width-some with qtz. crystallizing perpendicular to vein walls (extensional). Sulphides are dominantly po with lesser py & cp to 15-20% total as veins bands & blebby patches. Cp occurs only with c.g. po. Py generally occurs in cross cutting qtz ± calcite veinlets. Schistosity defined by elongate py, po blebs. 217.93-218.08: Fault gouge + breccia including fragments of underlying sediments.	Sulphide banding at 50-55°										
(705	715.5)	93%												
218.08	273.10	73%	Interbedded grey, f.g., calcareous siltstones & black v.f.g., calcareous argillites.											
(715.5	896)	99%												











# DRILL HOLE RECORD

FALCONBRIDGE LIMITED

Inclination	Bearing	PROPERTY	Length	HOLE No: 11-82	Page # 8 of 12
Collar		Location	Hor. Comp. / Vert. Comp.	Sheet of	
		Elevation	Bearing	Logged by	
		Coordinates	N E	Sampled by	
			Core size / Recovery %	Driller	

DEPTH in metres (ft)	RECOVERY RQD Core	DESCRIPTION	INTERSECTION ANGLE	GRAPHIC 1:500	SAMPLES				ASSAYS					
					No.	From	To	Ft	Cu%	Co%	Zn%	Ag	Au	
382.50 (1255)	383.90 (1259.5)	37% 93%	Dark green, f.g.-m.g. massive chloritized flows. Chlorite-filled amygdules. Bears a 30cm layer of massive banded sulphides, po & py subequal.	Contact with Sulphides = 45°	382.52 383.90	450	1254	1264	10	1.34	0.12		<0.05	
383.90 (1259.5)	391.97 (1286)	50% 93%	Massive Sulphides. Dominantly po. Very similar to previous section 376.12-382.52m. More magnetite as veins & stringer-like bands especially towards bottom of zone. Py in discrete massive bands but usually as spheroidal & cubic grains in massive po. Stilpnomelane occurs in both veinlike form & as matrix to c.g. py. Cp 5-10% blebs in po & conc. blebs in siliceous gangue & Qtz veins.	Sulphide banding 48° Foliation = 50°	391.97 F F F	451	1264	1274	10	2.31	0.12	0.03	0.05	0.002
391.97 (1286)	409.80 (1344.5)	70% 100%	Massive py-rich sulphides. Some po rich bands.		409.80 412.09	452	1274	1284	10	1.88	0.10		<0.05	
391.97 (1286)	409.80 (1344.5)	70% 100%	Massive sulphides: py dominant, f.g. to c.g. with occ. po-rich bands bearing disseminated py blebs. Siliceous cherty matrix to sulphides in places. Some chert siderite bands and/or veins. Scattered magnetite pods & stilpnomelane forming veins & matrix to py. Cp disseminated in py as m.g. blebs in po & in coarse blebs in siliceous gangue.	Sulphide banding at 400m=45° Sulphide band in at 405m 40°	416.66 430.23	453	1284	1294	10	2.83	0.10	0.02	0.05	0.002
			393.65m: Fault gouge 402.03m: Shear zone with clay development.			454	1294	1304	10	1.33	0.084		0.05	
						455	1304	1314	10	1.03	0.067	0.02	0.05	0.002
						459	1314	1324	10	1.62	0.071		0.05	
						457	1324	1334	10	1.75	0.050	0.02	0.05	0.002
						458	1334	1344	10	2.16	0.058		0.05	
409.80 (1344.5)	430.23 (1411.5)	46% 85%	Semi-massive to massive pyritic sulphides in green cherts or cherty tuffs. Includes vuggy partially oxidized zone with supergene chalcocite.											
409.80 (1344.5)	412.09 (1352)	87% 100%	Stringer to semi-massive sulphides in green cherty f.g. tuffs. Sulphides are mostly py with subordinate po occurring in semi-massive bands, veins & stringers. Probably 40% sulphides overall. Minor dissem. py cubes in the tuff & minor cp veinlets.			78460	1344	1354	10	1.26	0.038	0.02	<0.05	0.005
412.09 (1352)	416.66 (1367)	58% 89%	Massive to semi-massive sulphides in siliceous green cherty host-possibly tuff. Mostly massive py with minor stringer po f.g. dissem. cp down to 414.83. Lower section is semi-massive pyritic sulphides with occ. po-rich bands in cherty host rock. Some narrow vuggy sections.			461	1354	1364	10	1.12	0.063		<0.05	
416.66 (1367)	430.23 (1411.5)	35% 82%	Partially oxidized & supergene enriched vuggy semi-massive to massive sulphides in cherty(tuff?) host rock. Visible hypogene sulphides are mostly py with much cp as cg patches & dissemination. Only very minor pyrrhotite is observed in irregular bands & stringers. Vuggy zones are numerous, partly connected, with only minor iron oxide coatings. Some vugs are fringed by py, others are partially filled by a soft black powdery mineral or occ. vein-like blue-black metallic mineral - undoubtedly chalcocite. Some dark brown metallic patches may be mixtures of intergrown hematite & chalcocite. Chalcocite most abundant from 417m to 427.35m. Minor magnetite in places.			462	1364	1374	10	2.47	0.22	0.20	<0.05	0.002
						463	1374	1384	10	11.6	0.23		<0.05	
						464	1384	1394	10	14.2	0.21	0.10	0.05	0.002

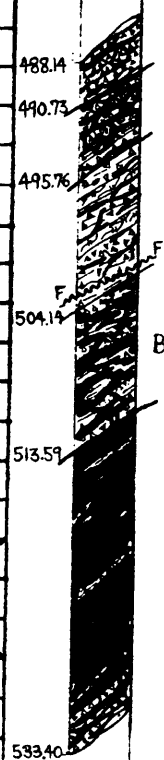


# DRILL HOLE RECORD

FALCONBRIDGE LIMITED

Caller	Inclination	Bearing	PROPERTY	Length	HOLE No. 11-82	Page# 10 of 12
			Location	Hor. Comp. / Vert. Comp.	Sheet of	
			Elevation	Bearing	Logged by	
			Coordinates	N Begun / Completed	Sampled by	
				E Core size / Recovery %	Driller	

DEPTH in metres (ft)		RECOV'Y	DESCRIPTION	INTERSECTION ANGLE	GRAPHIC 1:500	SAMPLES			ASSAYS					
FROM	TO	RQD				Core	No.	From	To	Fr	Cu%	Co%	Zn%	Pb%
458.72	488.14		CONTINUED FROM PREVIOUS PAGE lesser po bands with intervening layers of green cherty (tuff?) rock. Sulphides comprise > 50% of these zone, e.g. 471-37 - 473.35m, 476.55 - 479.76m & 485.85 - 488.14m. Sphalerite is observed as isolated stringer-like blebs associated with qtz and/or sideritic veins or bands. Sphalerite often appears to rim py & cp blebs. Sphalerite noted at 473.35m (1553') & 482.65-482.80m (1583.5-1584')											
488.14	490.73	81%	100%	<u>Pyrite stringer zone in dark green, silicified, v.f.g. cherty tuff(?)</u> . Minor siderite & magnetite veining. Pyrite bands & stringers abound + minor disseminated py cubes. Approx. 40% py overall. Minor cp in pyritic veins (≈ 5% total). Traces stilpnomelane.										
490.73	495.76	82%	100%	<u>Stringer, semi-massive to massive pyritic sulphides in dark green to black cherty host rock in part silicified argillite. Numerous magnetite bands, pods &amp; veinlets. Subordinate Qtz-siderite veins. Traces stilpnomelane. Stringer &amp; dissem. f.g. cp in py &amp; around siliceous gangue. Stringer zone of py + minor po occurs in silicified black argillite from 493.93-494.69m(1620.5 - 1623')</u> .										
495.76	533.40	64%	97%	<u>Stringer &amp; semi-massive to massive py-rich sulphides in interbedded sequence of argillites siltstones, chloritic volcanics &amp; cherty tuffs. Sulphides primarily in cherty host rocks.</u>										
495.76	504.14	73%	100%	<u>Disseminated &amp; stringer sulphides in cherty argillites, siltstones &amp; minor chloritic volcanics. Beds range from &lt;1mm to 3cm thick. Silicified sediments &amp; volcanics compose 60% of zone, py 20%, po 15%, 2-3%cp, 2-3% Qtz-calcite ± stilpnomelane. Py &amp; po occur both as dissem. blebs &amp; as massive bands conformable to bedding or cross cutting stringers. Chloritized green volcanics occur from 496.82m-497.65m &amp; from 499.57m to 500.79m. Shear zone at 503.38m.</u>	Bedding @ 497m=53° 501m=35°									
504.14	513.59	60%	100%	<u>Semi-massive sulphides (mostly py) with some massive zones in cherty argillites, minor siltstones, some cherty tuffs. Much stilpnomelane &amp; qtz-chalcedony veins. f.g to stringer type sphalerite in patchy irregular veinlets esp. in zone. 507.5m-513.59m (1665-1685'). Sporadic cp blebs. Py 50%, cherty argillites etc.:35-40%, cp, sphalerite 2-5%. Qtz, stilpnomelane, magnetite 5-10%.</u>	Bedding=55°									
513.59	533.40	62%	95%	<u>Massive to semi-massive pyritic sulphides with some minor interlayered cherty gray to black argillites. Approximately 75% py, 2-5% cp, 10% po &amp; 10-13% gangue in overall composition. Numerous cross cutting quartz veins. Minor sphalerite also occurs from 1-4% as irregular stringer-like blebs associated with qtz and/or calcite veins e.g. at 514.65m(1688.5'), 515.57-516.64m(1691.5-1695'), 519.07m(1703ft), 520.60m(1708'), 523.34-523.95m (1717-1719ft)</u>										



No.	From	To	Fr	Cu%	Co%	Zn%	Pb%	Ag	oz./ton Au
485	1594	1604	10	1.06	0.044	0.01		0.19	
488	1604	1614	10	0.72	0.028	0.02		0.05	0.002
489	1614	1624	10	0.71	0.020	0.01		0.05	0.015
490	1624	1634	10	0.75	0.012	0.01		0.13	0.020
491	1634	1644	10	0.20	0.008	0.01		0.05	0.005
492	1644	1654	10	0.68	0.012	0.06		0.13	0.002
493	1654	1664	10	0.74	0.020	0.18		0.05	0.002
494	1664	1674	10	0.98	0.020	0.71		0.05	0.002
495	1674	1684	10	1.32	0.032	1.17		0.05	0.002
78496	1684	1694	10	0.70	0.028	0.33		0.15	0.025
497	1694	1704	10	1.03	0.032	0.27		0.15	0.015
498	1704	1714	10	0.94	0.020	0.36		0.15	0.020
499	1714	1724	10	1.29	0.020	0.48		0.23	0.030
500	1724	1734	10	2.73	0.012	0.08		0.19	0.010
501	1734	1744	10	1.02	0.008	0.03		0.19	0.005
502	1744	1749	5	1.02	0.008	0.04		0.19	0.002
503	1749	1754	5	0.11	0.004	0.20		<0.05	0.002

# DRILL HOLE RECORD

FALCONBRIDGE LIMITED

Inclination		Bearing	PROPERTY	Length		HOLE No: 11-82	
Callar			Location	Hor. Comp.	/ Vert. Comp.	Sheer	of
			Elevation	Bearing		Logged by	
			Coordinates	N	/Completed	Sampled by	
				E	Core size /Recovery	% Driller	

DEPTH in metres FROM TO	RECOV'Y RQD Core	DESCRIPTION	INTERSECTION ANGLE	GRAPHIC 1:500	SAMPLES			ASSAYS				COMPOSITES						
					No.	From	To	Fr										
513.59	533.40	CONTINUED FROM PREVIOUS PAGE																
		Pyrrhotite occurs in distinct veins & bands scattered through the section, usually 1cm-3cm wide. Cp occurs as previous both in f.g. inter-growths with py, coarser stringer blebs in po & in Qtz veins & siliceous patches. Magnetite is locally abundant in pods & patchy stringers up to 20%. e.g. 525.48-526.24m (1724-1726.5') & 526.69-530.96m (1728 to 1742'). Some py occurs disseminated in massive magnetite (also cp & Qtz siderite veins & bands usually accompany the magnetite concentrations.																
		526.69-527.61m: (1728-1731'): Po increases to almost 50% & c.g. cp is abundant (to 10%) in stringer-like veins. Magnetite 10-15%																
		Below 530.96m (1742') becomes semi-massive & pyrrhotite rich with sulphides forming semi-massive bands & cross cutting stringers in a silicified black cherty host rock - probably siltstone or argillite originally. Some dark green, cherty tuff? at end of section.																
533.40 (1750	616.00 2021)	45%98%	Interbedded black calcareous argillites, calcareous siltstones & limestones. Occ thin bedded volcanics (tuffs, flows). Stringer sulphides up to 30%. Mode: 15-20%															
533.40 (1750	583.39 1914)	51%98%	Black v.f.g. calcareous argillite interbedded with thin grey calcareous siltstones & very occ thin bedded volcanics. Sulphides occur as stringers, veins blebby patches & occ conformable layers & trains of disseminated blebs. Po & py occur subequally with very minor cp. Sulphides are erratic in distribution with some narrow but massive lenses & some sections of only sparsely dissem blebs. Sulphides form perhaps 25-30% of the section overall. Some sections display small scale folding in sediments with boudinage of siltstone layers into clast-like elongate lenses. Occ Calcite-filled tension gashes.	Bedding at 534m=55° 535.5m=10° 536.5m=15° Banding of potcalcite at 540m = 43°														
			533.40-534.0m: Boudinaged siltstone, wavy & stretched bedding. Conformable py bands.	Bedding at 546.8m=20°														
			534.62-535.84m: Folded po bands // bedding.	553.2m=40°														
			538.89m: Minor fault, py-lined.	560.0m=60°														
			545.59-545.89m: "Clasts" of calc. siltstone 1mm to 1cm diameter.	570.7m=50°														
			546.81m: Massive py vein/layer // bedding.	573.63m=50°														
			549.86-550.77m: Massive py bands conformable to bedding. Py in tension gashes.															
			553.06-553.36m: As above.															
			561.14-561.31m: Lt green welded(?) tuff, subrounded qtz clasts to 30%															
			564.49-566.01m: Calc siltstone boudins to 2mm in length.															
			566.01-566.16m: Porphyritic mg green andesitic flow with qtz phenocrysts.															
			571.20-571.35m: Lt. green fg welded tuff with qtz clasts.															
			571.50m: Py band with load structures indicating tops towards top of hole.															



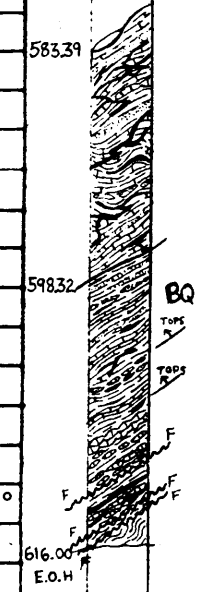


# DRILL HOLE RECORD

FALCONBRIDGE LIMITED

Callar	Inclination	Bearing	PROPERTY	Length	HOLE No. 11-82
			Location	Hor. Comp. / Vert. Comp.	Page # 12 of 12
			Elevation	Bearing	Sheet of
			Coordinates	Begin / Completed	Logged by
				Core size / Recovery %	Sampled by
					Driller

DEPTH in metres (ft)		RECOV'y	DESCRIPTION	INTERSECTION ANGLE	GRAPHIC 1:500	SAMPLES			ASSAYS			COMPOSITES		
FROM	TO	RQD				Core	No.	From	To	Fr				
533.40	583.39		CONTINUED FROM PREVIOUS PAGE											
			573.63m: Py bands depressing bedding in argillite.	Bedding at										
			575.0-580.03m: Boudinaged limestone beds present with calc. siltstone in argillite sequence. Cross cutting po veins + dissem py blebs // bedding .	573.6m=50° 576m = 33°										
			578m: Truncation of beds due to soft sediment load structures indicates tops in up-hole direction. Some convolute bedding.											
583.39 (1914)	598.32 (1963)	30%	95%	Transitional section from above to following zone. Interbedded thinly layered mixture of grey calcareous siltstone as previous with some grey limestones in black calcareous argillite. Convolute beds, warping & boudinaged beds in places. Intense po and/or py veining: veins often folded or sheared. Abundant calcite veins, minor shears & slick 'n' sided fracture planes.										
598.32 (1963)	616.00 (2021)	41%	99%	Vf.g calcareous to non-calcareous black argillite interbedded with minor grey f.g. calcareous siltstone & limestone. Limestone increases in abundance relative to siltstone with depth. Several sections of boudinaged conglomeratic siltstone/1st in argillite. Minor intercalated volcanic. Py & po veining ± conformable layers are present but generally less abundant & form <10% of rock. Bedding thickness of sediments range from 4mm to 1cm. Schistosity in argillites parallels bedding often defined by v.f.g. elongate po/py lenticular blebs.	Bedding at 599m=53° 599.8m=60° 601.68m=75°									
			600.15-600.46m: Calcareous siltstone boudins, rounded & stretched with feathery ends. 2mm to 2cm in length.											
			605.5m: Graded bedding indicates tops in up-hole direction.											
			605.64-606.25m: "Conglomeratic" breccia of clast-like siltstones & limestones in black argillite. Likely due to deformation & boudinage. Conglomerates occur in bed-like zones separated by argillite. Po & py occur in matrix to clasts.											
			606.86m: Qtz vein bearing fragments of green chloritized volcanic.											
			607.77m: Graded py in siltstone indicating tops in up-hole direction.											
			608.69-612.34m: Boudinaged limestone clasts & pinch & swell limestone beds in black argillite. Limestone "clasts" to 1cm -very abundant - produces appearance of framework-supported cglm.	Bedding at 610m=75° 614m=75°										
			612.34-612.65m: Strong fracture zone(fault?) in graphitic argillite.											
			613.56m: Semi-massive po band & veins with 3% stringer cp.											
			613.71-614.48m: Boudinaged limestone "clasts"+Qtz-siderite veins with po & cp.											
			615.09-616.00m: Intensely veined by Qtz-calcite-producing brecciated appearance. Strongly fractured with shears at 615.09-615.40m & 615.85-616.00m.											
			E.O.H. 616.00m (2021 ft)											



# DRILL HOLE RECORD

FALCONBRIDGE LIMITED

Inclination		Bearing	PROPERTY	Length		HOLE No: 11-82	Page#
Collar			Location	Hor. Comp.	/ Vert. Comp.	Sheet	of
			Elevation	Bearing		Logged by	
			Coordinates	N	Begin	/Completed	
				E	Core size	/Recovery	% Driller

FOOTAGE		RECOV'Y		DESCRIPTION	INTERSECTION ANGLE	GRAPHIC	SAMPLES			ASSAYS				COMPOSITES			
From	To	Run	Core				No.	From	To	Ft							
PAJARI INSTRUMENT BOREHOLE SURVEY RESULTS																	
DEPTH				INCLINATION													
Collar (0)				-54°													
4.6m (15ft)				-52°													
30.5m (100ft)				-46°													
61.0m (200ft)				-46°													
91.4m (300ft)				-42°													
122.0m (400ft)				-41°													
182.9m (600ft)				-42°													
243.8m (800ft)				-40°													
304.8m (1000ft)				-40°													
335.3m (1100ft)				-42°													
365.8 (1200ft)				-40°													
423.7m (1390ft)				-39°													
493.8m (1620ft)				-37°													
554.7m (1820ft)				-36°													
616.0m (2021ft)				-31°													

# DRILL HOLE RECORD

FALCONBRIDGE LIMITED

Cellar	Inclination	Bearing	PROPERTY WINDY CRAGGY	Length 415.14m (1362ft.)	HOLE No: 12-82
45.72m	-45°	229°	Location Section M-M'	Hor. Comp. / Vert. Comp.	Sheet of
106.68m	-45°		Elevation 1836m	Bearing S49°W (229°)	Logged by T. Heah
154.53m	-45°		Coordinates 11,051.00m N	Began Aug.1/1982 / Completed Aug 10/82	Sampled by T. Heah/P. Andexer
224.03m	-43°		9,435.64m E	Core size NQ/BQ/Recovery 86 %	Driller Longyear Fly 38 (rig #2)
324.61m	-37°				
365.76m	-35°				
414.53m	-32°				

DEPTH in metres (ft.)		RECOV'Y		DESCRIPTION	INTERSECTION ANGLE	GRAPHIC 1:500	SAMPLES			ASSAYS				
FROM	TO	RQD	Core				No.	From	To	Fr	Cu%	Co%	Zn%	Ag
0.00	13.72	0%	38%	Interbedded black argillite & calcareous siltstone. In places silicified, also sheared & faulted.										
(0	45)													
0.00	5.79	0%	29%	Casing: Poor recovery. Fragments of black weathered argillite.										
(0	19)													
5.79	13.72	0%	45%	V.f.g. black argillite with thinly interbedded grey calcareous siltstone. Beds are boudinaged in places with some shearing & silicification. Well fractured overall with several zones of intense fracturing. Rusty coatings common on fracture planes.	Bedding = 50°									
(19	45)													
				7.47 - 7.62m: Boudinaged, sheared, silicified argillite.										
				7.62 - 9.14m: Fault zone										
				9.14 - 9.60m: Sheared silicified, boudinaged black calcareous argillite.										
				9.60 - 9.91m: Fault zone										
				12.65m: Fault zone										
				13.72m: Fault zone										
13.72	24.99	0%	28%	Fault zone in dominantly altered pyritic, chloritic volcanics.										
(45	82)													
13.72	24.99	0%	28%	Grey-green m.g. altered volcanic. Chlorite aggregates replacing phenocrysts. Pyritic veins & boxworks are common. Rusty coatings occur in the extensive fractures & clay development is widespread often forming a soft sticky groundmass in which remnant volcanics are found. The entire section may be considered part of a large weathered fault zone.										
(45	82)													
24.99	54.86	2%	25%	Fault zone: extensive clay formation, angular quartz, volcanic & argillite clasts cemented by f.g.? secondary pyrite. Strong secondary? pyrite with depth.										
(82	180)													
24.99	36.58	0%	22%	Soft sticky clays (yellow to brown) interspersed with massive f.g. granular & occ friable secondary pyrite. In places angular lithic fragments & qtz "pebbles" are cemented by f.g. vuggy pyrite, sometimes black in colour, giving appearance of a "collapse breccia" re-cemented by sulphides. Fault zone.										
(82	120)													
36.58	37.80	0%	48%	Massive yellow-green soft clays & fibrous soft mineral: Radiating silky fibres. Hardness: less than 2 probably serpentine. Probable Fault zone.										
(120	124)													
37.80	54.86	3%	25%	Mostly massive py with hematitic siliceous "pebbles" re-cemented by py. Pyrite tends to be very f.g. granular & friable, often rapidly decomposing to pyrite sand after recovery. Minor po noted in more massive portions as irregular stringers with cp in veins e.g. 40.84-43.59m (134-143ft). Even massive sections of core are somewhat friable, strongly fractured with										
(124	180)													

GRAPHIC LOG LEGEND

[Symbol]	Limestone
[Symbol]	Argillaceous Limestone
[Symbol]	Silty Limestone
[Symbol]	Siltstone
[Symbol]	Argillite
[Symbol]	Calcareous Argillite
[Symbol]	Intermediate volcanic flow/tuff
[Symbol]	" , porphyritic
[Symbol]	" , cherty or silicified
[Symbol]	Chert, silicified breccia
[Symbol]	Gossan
[Symbol]	Sulphides

ABBREVIATIONS and SYMBOLS

po	
py	pyrite
cp	chalcopyrite
occ.	occasional
nmrs.	numerous
qtz.	quartz

GEOLOGICAL BRANCH ASSESSMENT REPORT

10,946

78504	80	80	0	3.73	0.053	0.08	4.32	0.025
505	90	97	7	1.85	0.11	0.08	0.05	0.020
576	97	108	11	2.06	0.072	1.48	2.04	0.020
506	108	118	10	0.21	0.03	0.08	2.28	0.075
507	118	121	3	0.60	0.038	0.16	1.88	0.080
577	121	126	5	0.07	<0.005	0.04	<0.05	0.002
578	126	136	10	1.87	0.044	0.09	0.09	0.015
579	136	148	12	1.30	0.070	0.04	0.13	0.010
508	148	158	10	0.23	0.080	0.04	6.03	0.040
509	158	168	10	0.48	0.11	0.02	0.09	0.010
510	168	178	10	0.77	0.079	0.12	0.09	0.010





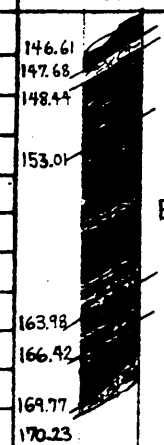


# DRILL HOLE RECORD

FALCONBRIDGE LIMITED

Inclination	Bearing	PROPERTY	Length	HOLE No. 12-82	Page 4 of 12
Callar		Location	Hor. Comp. / Vert. Comp.	Sheet of	
		Elevation	Bearing	Logged by	
		Coordinates	N E	Sampled by	
			Core size / Recovery %	Driller	

DEPTH in metres (ft.)	RECOV'y	DESCRIPTION	INTERSECTION ANGLE	GRAPHIC 1:500	SAMPLES				ASSAYS			oz/ton		
					No.	From	To	Ft	Cu%	Co%	Zn%	Ag	Au	
146.61 (481)	147.68 (484.5)	64% 74%		Massive pyrite with some po bands. Veins & "stockwork" of stilpnomelane. Minor gypsum veins. Weak sphalerite 1-2% as scattered blebs & stringers.										
147.68 (484.5)	148.44 (487)	0% 67%		Dark green, f.g. strongly fractured, chloritized foliated tuffs with 1% disseminated py.										
148.44 (487)	153.01 (502)	43% 96%		Massive sulphides; consisting of well banded pyrrhotite (35%) & pyrite (50%) with minor stringers & blebs of cp (3-5%) in a cherty grey green host rock. Gangue includes siderite & Qtz veins + very minor stilpnomelane comprising 8-10% of zone. Sphalerite occurs as wispy irregular veins & scattered blebs 2-3%.										
153.01 (502)	163.98 (538)	52% 98%		Massive to semi-massive pyritic sulphides in cherty grey host rock with numerous sideritic bands & pods. Accessory minerals include fracture fillings of gypsum, Stilpnomelane & patchy to vein-like concentrations of magnetite. Composition varies over zone but overall is 65% py, 10% po, 5% cp, 15% gangue & 2-5% sphalerite as wispy irregular blebs & veinlets. 157.58-158.34m: (517-519.5ft) Abundant siderite bands & veins with disseminated & vein-like sphalerite. 161.70-162.15m: (530.5-582ft) Abundant deformed Qtz-siderite bands & disseminated sphalerite. 162.46-162.76m: (533-534ft) Abundant magnetite stringers. 162.61-163.98m: (533.5-538ft) Semi-massive py with numerous qtz-siderite veins, occ. brecciated. Black cherty fragments in pyrite & numerous magnetite bands. Sphalerite common as irregularly distributed wispy blebs. Observed po rimmed by cp rimmed in turn by sphalerite. Minor gypsum.										
163.98 (538)	166.42 (546)	60% 100%		Massive pyrrhotitic sulphides. Some minor py bands & veins. Cherty, dark grey host rock & numerous siderite bands/layers. Some stringer cp, perhaps 4-5% overall.										
166.42 (546)	169.77 (557)	70% 100%		Massive pyritic sulphides. Brecciated at beginning by abundant calcite ± qtz-siderite bands & veins. Dark grey cherty host rock-probably volcanic tuff originally. Cp to 6% as disseminated stringer-like blebs. Sphalerite to 5%. Probable disseminated magnetite in parts judging by magnetic properties of the pyritic core. Occ gypsum & stilpnomelane veins or fracture fillings.	Sulphide banding at 169.5m = 42°									
169.77 (557)	187.45 (615)	84% 100%		Massive to semi-massive sulphides within altered brecciated volcanics & cherty host rocks. Minor intercalated schistose tuffs.										
169.77 (557)	170.23 (558.5)	72% 100%		Light gray, v.f.g. schistose tuff, Schistosity well defined by porphyroblastic(?) muscovite (to 2mm) in aphanitic matrix.	Contact=20°									



BQ

No.	From	To	Ft	ASSAYS			oz/ton	
				Cu%	Co%	Zn%	Ag	Au
78580	484	487	3	0.03	0.006	0.12	<0.05	0.002
78543	487	497	10	0.66	0.035	1.82	0.29	0.002
544	497	507	10	1.14	0.040	1.43	0.42	0.002
545	507	517	10	0.60	0.040	1.98	0.38	0.020
546	517	527	10	0.69	0.029	1.77	0.05	0.002
547	527	537	10	0.40	0.016	2.24	0.29	0.002
548	537	547	10	1.46	0.040	3.00	0.82	0.010
549	547	557	10	1.65	0.058	2.12	0.88	0.020
78581	557	558	1	0.24	0.012	0.96	0.05	<0.002

# DRILL HOLE RECORD

FALCONBRIDGE LIMITED

Inclination		Bearing	PROPERTY	Length	HOLE No: 12-82	Page 5 of 12
Callar			Location	Hor. Comp. / Vert. Comp.	Sheet of	
			Elevation	Bearing	Logged by	
			Coordinates	N	Sampled by	
				E	Driller	
				Core size	/Completed	
					/Recovery %	

DEPTH In metres		RECOV'Y		DESCRIPTION	INTERSECTION ANGLE	GRAPHIC 1:500	SAMPLES				ASSAYS			oz/ton		
FROM (ft)	TO	RQD	Core				No.	From	To	Fi	Cu%	Co%	Zn%	Ag	Au	
170.23 (558.5)	175.87 (577)	88%	100%	Semi-massive sulphides in sideritic matrix. Some massive py bands & layers & minor po bands + numerous pyritic stringers veins & pods. Numerous sideritic veins in sulphides also. Cp disseminated in py & as occ stringer blebs in siderite. Disseminated wispy sphalerite blebs. 173.13-174.35m:(568-572ft) Abundant vein-like sphalerite blebs up to 3mm wide.	Contact at 175.87m=35°	170.23 175.87 176.48 178.61 183.49	BQ	78550	558	568	10	0.61	0.022	1.31	0.29	0.025
								551	568	578	10	1.28	0.022	1.29	0.57	0.025
175.87 (577)	176.48 (579)	67%	100%	Stringer sulphides in dark green f.g. schistose chloritized volcanic(tuff?). F.g. dissem. po blebs are elongated parallel to foliation. Minor clay alteration of clasts(?) in matrix. Sulphides are pyrite for most part with subordinate po, minor cp. Intensity of stringer mineralization increases with depth to almost semi-massive (40-50%) bands. Grades into following zone. Numerous sideritic veins & disseminated wavy sphalerite blebs.												
176.48 (579)	178.61 (586)	88%	100%	Semi-massive to massive sulphides (55-80%) in chloritized volcanics as above & cherty rocks (silicified sections?). Numerous sideritic bands & veins in places brecciating sulphides. Py & po are subequal in amount with py dominant. Sphalerite distributed irregularly throughout as wavy blebs. Sphalerite occurs in siderite at 178.31m (585ft).				552	578	589	11	1.91	0.035	1.61	0.68	0.030
178.61 (586)	183.49 (602)	81%	100%	Stringer to semi-massive bands of sulphides in variable host volcanics. Dominant host rock is a dark green, v.f.g. weakly schistose chloritized volcanic or tuff. Some intercalated layers & clasts of more felsic cherty tuffs or dacite tuffs giving appearance of volcanic breccia in places. Some bands of massive pyrite and/or pyrrhotite occur but most sulphide appears in irregular stringers & veins. Siderite veins & dissem. sphalerite are common 179.0m: 15cm thick massive po band with minor stringer cp. 179.07-179.83m:(587.5-590ft) Stretched, sub parallel "clasts" of cherty tuffs & soft chloritized tuffs cut by stringer po + minor cp, sphalerite py. Rotated layered cherty tuffs also observed: volcanic breccia? 179.83-180.14m:(590-591ft) Massive pyrite, irregularly banded by po, cp stringers, nmrs sphalerite veinlets-some as selvages to sideritic veins. 180.14-180.29m:Sheared brecciated, dark green, v.f.g. schistose chloritic tuff(?) with dissem. stretched po blebs // foliation. Some gypsum in shears. 180.29-180.59m:Grey brown, m.g. massive to faintly schistose dacitic tuff. 180.59-183.49m:(592.5-602ft) 45% pyritic sulphides as stringers & narrow massive bands in volcanic breccia host rock (as 179.07-179.83m). Numerous siderite veins.5%cp in stringers. 5% sphalerite.	Sulphide banding 180m = 32° Contact at 180.14m=32° Contact at 180.59=32°		78583	589	594	5	0.52	0.029	1.23	0.15	0.005	
								553	594	604	10	1.54	0.026	1.22	0.53	0.010



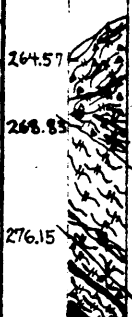
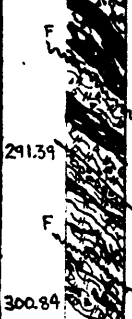

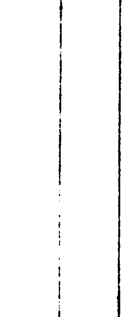




# DRILL HOLE RECORD

FALCONBRIDGE LIMITED

Inclination		Bearing	PROPERTY	Length		HOLE No. 12-82	Page# 8 of 12
Callar			Location	Hor. Comp.	/ Vert. Comp.	Sheet of	
			Elevation	Bearing		Logged by	
			Coordinates	N	/Completed	Sampled by	
				E	/Recovery %	Driller	

DEPTH in metres (ft.)		RECOV'y	DESCRIPTION	INTERSECTION ANGLE	GRAPHIC 1:500	SAMPLES				ASSAYS					
FROM	TO	RQD				Core	No.	From	To	Ft	Cu%	Co%	Zn%	oz/ton Ag Au	
264.57 (868)	300.84 (987)	55%	96%	Stringer sulphides in mixed volcanics: cherty tuffs to chloritic volcanics.											
264.57 (868)	268.83 (882)	48%	100%	Stringer po, minor py, cp in cherty green-gray f.g. tuffs. Accessory magnetite in irregular patchy pods & veins. Some po bands occur parallel to bedding. Py in veins, also disseminated as f.g. cubes. Up to 2% cp in po veins & Qtz ± calcite veins. Siderite bands occur but are not abundant. 267.31-267.61m: (877-878ft) Abundant po with associated chloritization of tuffs. Minor cp in veins. 268.22-268.68m: (880-881.5ft) Numerous pods, veins of po + cp stringers.	Contact at 264.57m= 36°		78555	876	883	7	0.79	0.008	0.06	<0.05	0.002
268.83 (882)	276.15 (906)	63%	100%	Dark green, chloritic, volcanic tuff similar to previous section from 250.24-264.57m. Only minor dissem py, po & po stringers to ≈ 10%. Chalcedonic veins (± cp,po) numerous. 271.58m: (891ft) Qtz-siderite veins with bleached envelopes. Some po & cp blebs, stringers. 274.93m: (902ft) Abundant po, minor cp in chalcedony veins. Cp usually in selvage of veins.	Contact at 268.83m=35°		588	883	893	10	0.84	0.010	<0.01	<0.05	<0.002
							589	893	905	12	0.15	<0.005	<0.01	<0.05	<0.002
276.12 (906)	291.39 (956)	61%	98%	Dominantly cherty aphanitic grey tuffs. Contact (upper) has interbedded cherty grey tuffs & dark green chloritic tuffs of upper unit. Some clasts of grey tuffs are caught up in chloritic tuff beds. Zone is abundantly veined by po both crosscutting & parallel to bedding. Some po in thin massive bands. Disseminated siderite (replacing py?). Cp in stringers + patchy blebs. 277.83-278.43m: (911.5-913.5ft) Massive po with stringer cp. Stilpnomelane in fractures. 280.42-281.94m: (920-925ft) Massive po, stringer cp, patchy py aggregates. 282.85-284.38m: (928-933ft) As above, py more abundant, some chloritized fragments in sulphides. 284.38-284.53m: (933-933.5ft) Dark green chloritic tuff with stringer po, py. 285.14-285.29m: (935.5-936ft) Pebbly chloritic shear? zone. 285.60-288.65m: (937-947ft) Cherty grey tuffs with warped bedding, irreg. deformation axes. 288.65-289.56m: (947-950ft) Massive po in chloritic volcanics.	Bedding at 276.50m=40° 285m = 35°		556	905	915	10	1.34	0.026	0.04	<0.05	0.002
							557	915	925	10	0.58	0.042	0.02	<0.05	0.002
							558	925	935	20	0.52	0.058	<0.01	<0.05	0.010
							559	935	945	10	0.44	0.038	0.01	<0.05	<0.002
							560	945	956	11	0.48	0.044	0.01	<0.05	0.002
291.39 (956)	300.84 (987)	46%	95%	Stringer sulphides with semi-massive section in heterogeneous zone of mixed volcanics—mostly dark green chloritic flows & tuffs with less abundant layers & brecciated fragments of cherty grey tuffs & concentrically banded structures - possibly representing pillows. Sulphides mostly po, minor cp, py. 291.69-292.46m: (957-959.5ft) Patchy cp. Concentric shaped cherty structures enclosed by tuff-breccia clasts. Some of the structures have amygdaloidal centres. (Edges of pillows)?	Contact at 291.39m=42° Contact at 293.22m= 15°		561	956	966	10	0.62	0.063	0.01	<0.05	0.002
							78585	966	979	13	0.15	0.046	0.01	<0.05	<0.002
							78562	979	989	10	0.65	0.098	0.03	<0.05	0.002





# DRILL HOLE RECORD

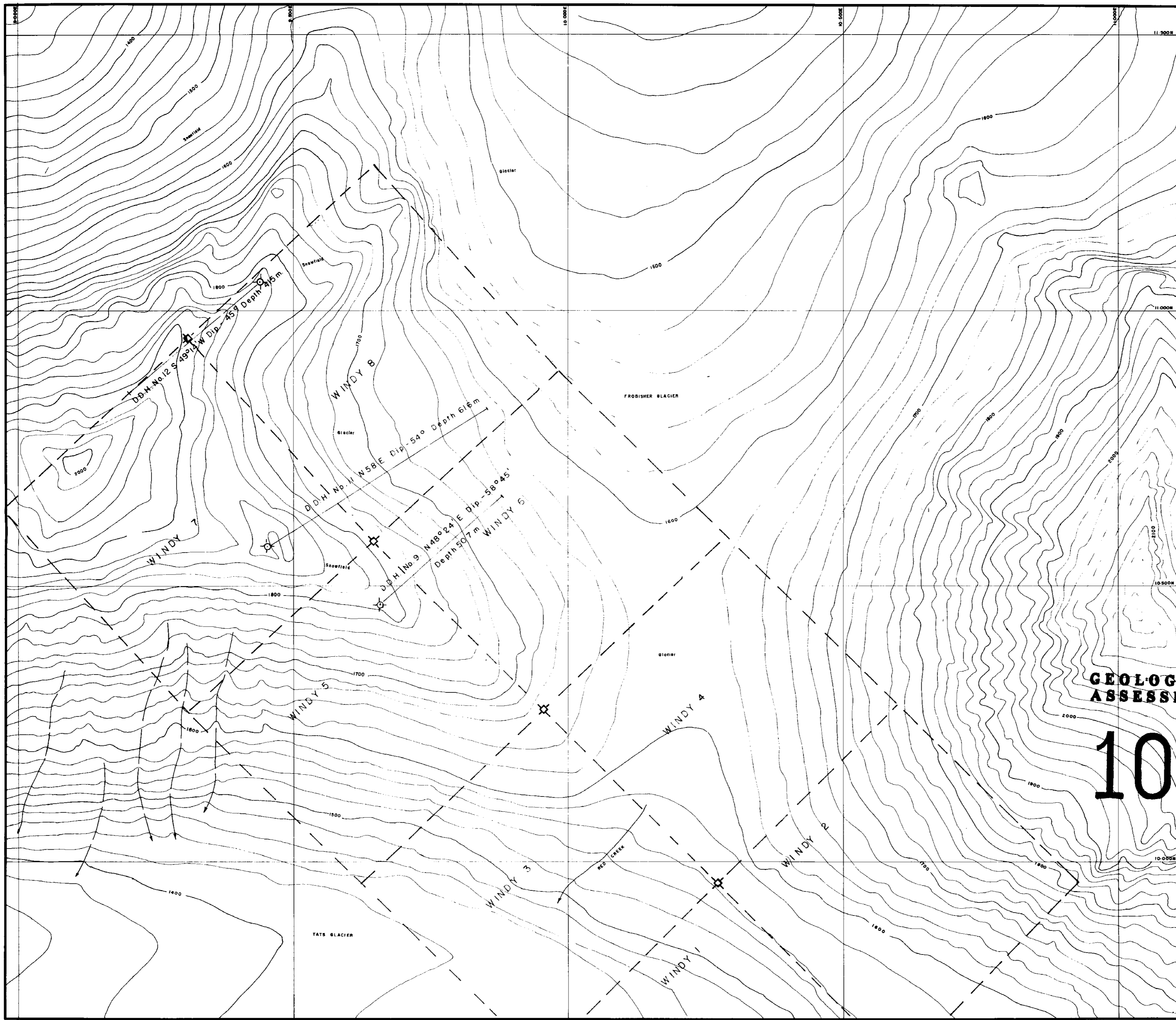
FALCONBRIDGE LIMITED

Callar	Inclination	Bearing	PROPERTY	Length	HOLE No. 12-82	Page# 11 of 12
			Location	Hor. Comp. / Vert. Comp.	Sheet of	
			Elevation	Bearing	Logged by	
			Coordinates	Begin / Completed	Sampled by	
				Core size / Recovery %	Driller	

DEPTH in metres FROM TO	RECOV'y RQD Core	DESCRIPTION	INTERSECTION ANGLE	GRAPHIC 1:500	SAMPLES			ASSAYS						
					No.	From	To	Fr	Cu%	Co%	Zn%	oz/ton Ag Au		
374.90 (1230)	390.14 (1280)	260% 290%				600	1226	1236	10	2.53	0.046	<0.01	<0.05	0.015
		Stringer sulphides with occ semi-massive sections in mixed cherty tuffs, chloritic tuffs & cherty argillite. Sulphides erratically distributed in stringers, veins & massive bands. Mostly po with subordinate py, cp.				601	1236	1246	10	0.90	0.025	<0.01	<0.05	0.002
		374.90-379.48m:(1230-1245ft) Cherty green aphanitic tuff with po,py stringers.				602	1246	1256	10	0.52	0.022	<0.01	<0.05	<0.002
		379.48-383.13m:(1245-1257ft) Cherty dark green to black argillite or tuff. Contact at 386.64m=40°				603	1256	1266	10	0.54	0.016	<0.01	<0.05	0.002
		Po,py in stringers.Cp veins from 379.48-379.78(1245-1246 ft) & 380.09-380.39m(1247-1248ft).				604	1266	1276	10	1.56	0.024	<0.01	<0.05	0.002
		383.13-386.49m:(1257-1268ft) As 374.90-379.48m with minor magnetite veins												
		386.49-386.64m:(1268-1268.5ft) Massive po, f.g. cp, some cherty black argillite nodules or concretions(concentric laminae).												
		386.64-387.10m:(1268.5-1270ft) grey-green m.g. crystal? tuff with siderite veins.												
		387.10-388.32m:(1270-1274ft) Cherty aphanitic argillite with stringer po + cp.												
		388.32-390.14m:(1274-1280ft) Semi-massive po with massive bands in cherty tuff, some portions less cherty-more chloritic. Cp veinlets observed. Also magnetite, qtz & siderite veins. Some f.g. dissem cp in po.												
390.14 (1280)	415.14 (1362)	41% 95%				605	1276	1286	10	1.24	0.020	<0.01	<0.05	0.002
		Grey to black argillites with silicified cherty sections. Stringer & dissem. sulphides scattered irregularly throughout. Mostly po with minor py & very irreg. scattered stringers & blebs of cp. Argillites are well bedded moderately schistose in parts. Colour varies from gray (silicified zones) to black.	Banding at 392.89m=60° Bedding=57° Foliation =			606	1286	1296	10	0.27	<0.005	<0.01	<0.05	0.002
		390.14-391.67m:(1280-1285ft) Very light gray silicified cherty zone becoming less cherty & darker with depth.	56° in opposite sense to bedding.											
		396.85:(1302ft) 5cm wide po band.												
		396.85-399.75m:(1302-1311.5ft) Sheared, strongly fractured black cherty argillite with abundant white crystals closely packed. Numerous magnetite veins & pods, also siderite,qtz & occ gypsum veins. Po as dissem. elongate blebs both parallel & crosscutting foliation. Chloritic slick 'n' sided shear planes. Fault zone or major shear at end.	Foliation at 45° to bedding @396.24m Bedding at 401.42m=40° 402.34m=35° 406m = 40°			608	1306	1316	10	0.22	0.014	<0.01	<0.05	0.002
		399.75-400.65m:Chloritic black soft argillite or volcanic tuff. Much po in veins.				609	1316	1326	10	0.12	0.008	<0.01	<0.05	0.002
		402.18m:(1319.5ft) Stretched, boudinaged grey f.g. beds (siltstone?)	408m = 58°			610	1326	1336	10	0.15	0.008	0.02	<0.05	0.002
		405.38-406.91m:(1330-1335ft) Interbedded cherty argillite & chloritized tuffs(?).Wavy bedding due to minor warping.Foliation cuts across bedding planes. Numerous cp veins stringers.	Foliation at 408m = 60° in opposite sense to bedding.			611	1336	1346	10	3.40	0.008	0.02	<0.05	0.002
		406.91-407.82m:(1335-1338ft) Semi massive (50%) po + minor cp(3-5%) Cherty & chloritized host rock,some qtz-siderite veins. Gypsum in fractures.				612	1346	1356	10	0.10	<0.005	<0.01	<0.05	0.010
						613	1356	1362	6	0.16	0.006	0.02	<0.05	0.002





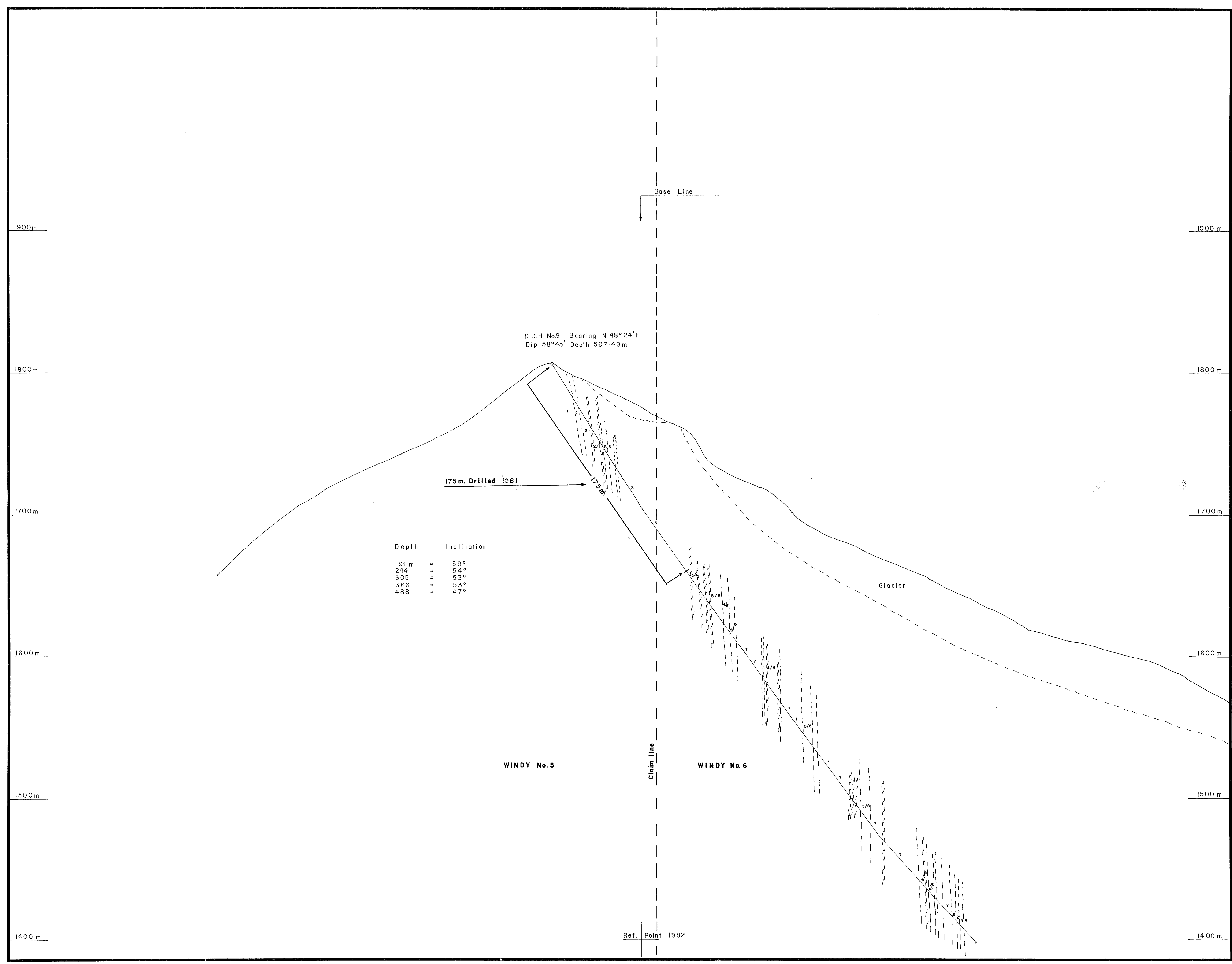


**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**10,946**



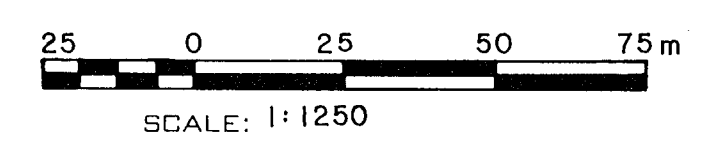
<b>FALCONBRIDGE LIMITED</b>		
PROPERTY:	WINDY & CRAGGY COPPER-COBALT	
LOCATION:	St. Elias Mtn. B.C. Lat. 59°44' Long. W. 137°45'	
TYPE OF MAP:	DDH. + CLAIMS LOCATION	
WORKING PLACE:		
BASED ON:		
DATE OF WORK:	MAP REF. NO.:	FIG. NO.:
DRAWN BY: G.T.		
DATE: SEPT. 1982	N.T.S. NO.: 114-P-12	052-82-4



Depth	Inclination
91 m	59°
244 "	54°
305 "	53°
366 "	53°
488 "	47°

LEGEND

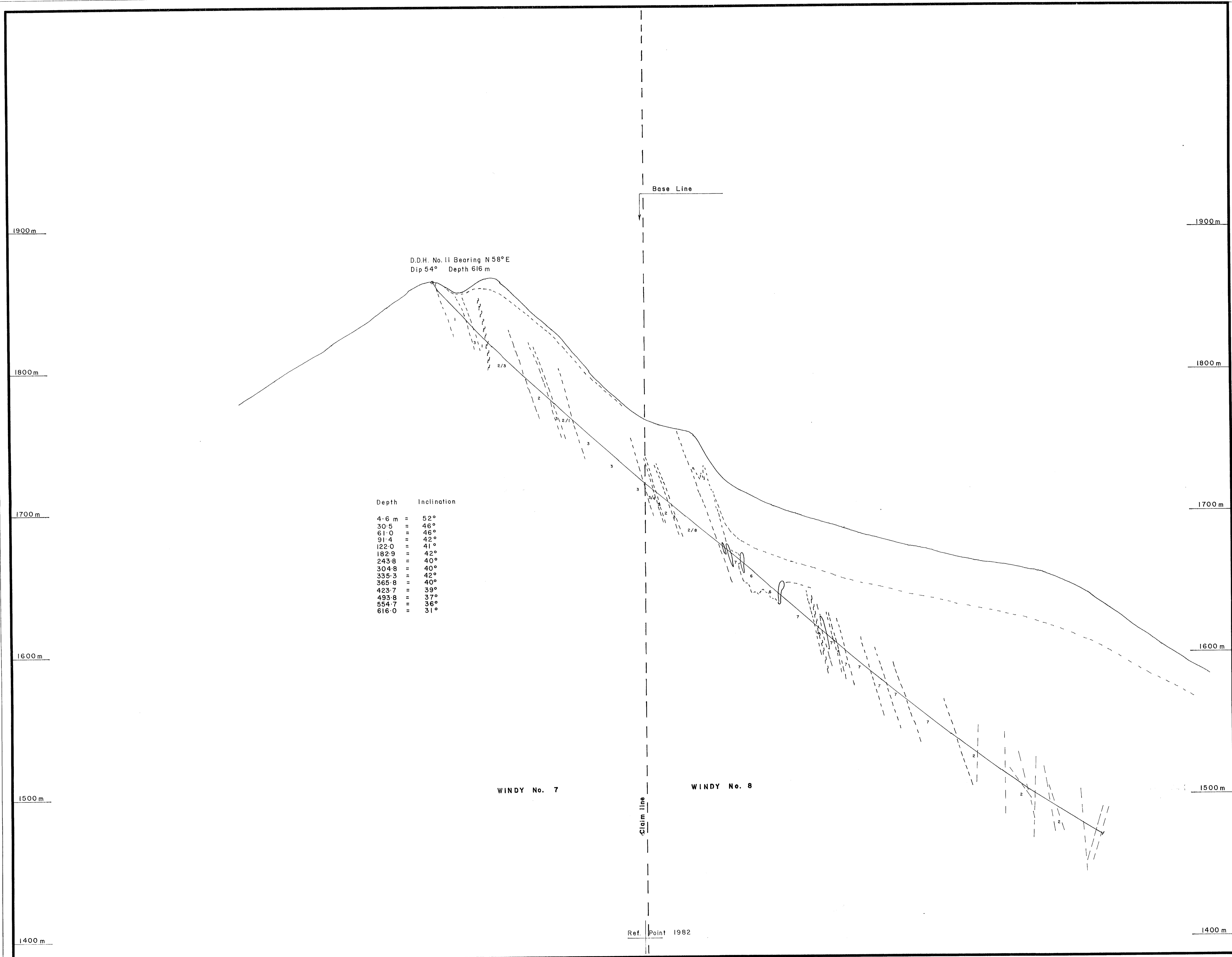
- 1 Limestone, calcareous argillite
- 2 Argillite, siltstone
- 3 Undifferentiated flows, tuffs, rare dykes
- 4 Chloritic altered volcanics
- 5 Cherty or siliceous zones
- 6 Gossan
- 7 Sulphides
- 8 Disseminated or stringer sulphides
- 5/8 Disseminated or stringer sulphides in cherty rock
- 4/8 " " " " in chloritic volcanics



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**10,946**

<b>FALCONBRIDGE LIMITED</b>		
PROPERTY: WINDY - CRAGGY		
LOCATION: St. Elias Mtn. B.C. Lat. 59°44' Long. 137°45'		
TYPE OF MAP: Section G-6' D.D.H. No 9 Geology		
WORKING PLACE:		
BASED ON:		
DATE OF WORK: Aug. 1982	MAP REF. NO.:	FIG. NO.:
DRAWN BY: G.T.		
DATE: Sept. 1982	N.T.S. NO.: 114-P-12	052-82-5



LEGEND

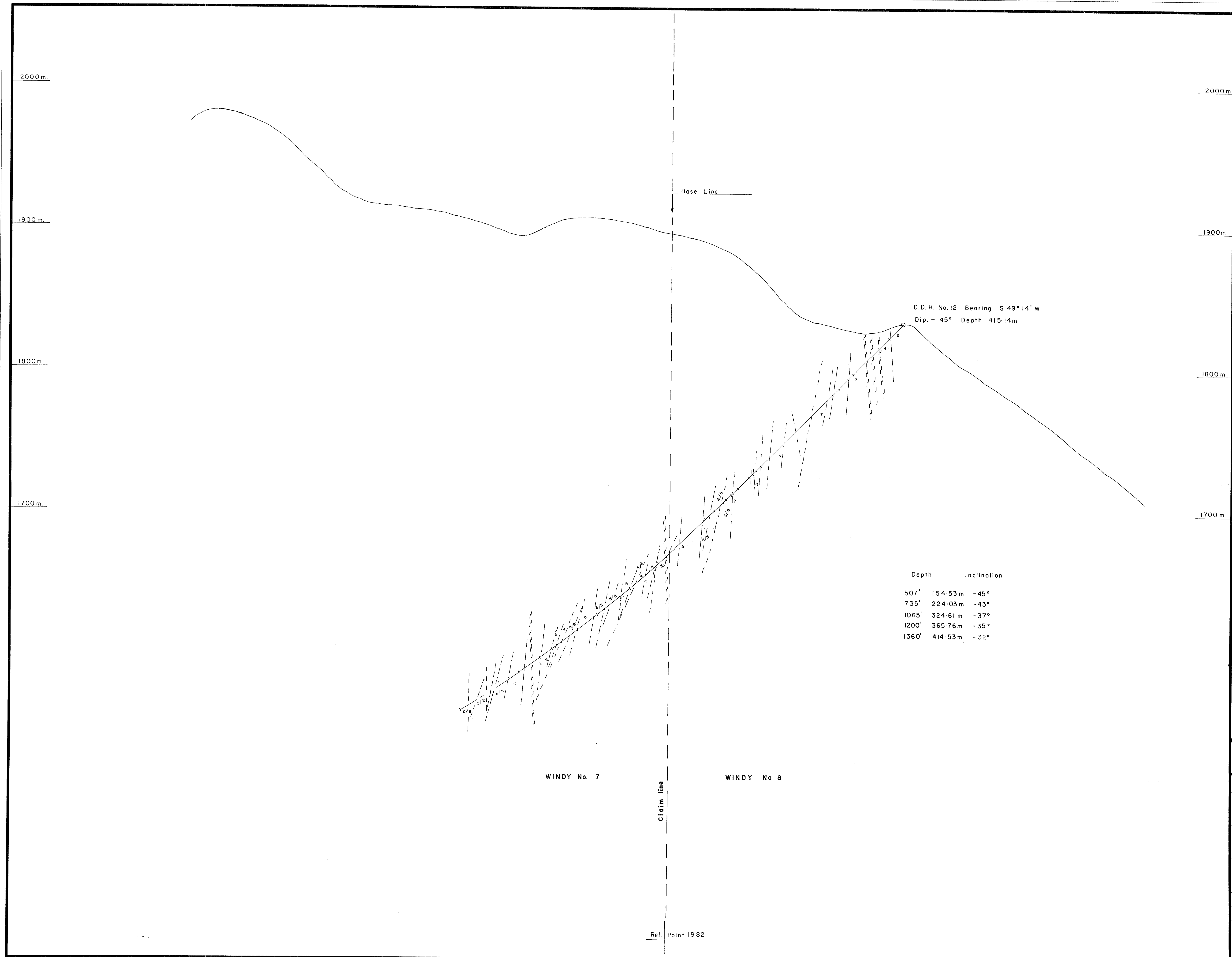
- 1 Limestone calcareous argillite
- 2 Argillite siltstone
- 3 Undifferentiated flows, tuffs, rare dykes
- 4 Chloritic altered volcanics
- 5 Cherty or siliceous zones
- 6 Gossan
- 7 Sulphides
- 8 Disseminated or stringer sulphides

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**10,946**

SCALE: 1:1250

<b>FALCONBRIDGE LIMITED</b>		
PROPERTY: WINDY - CRAGGY		
LOCATION: St. Elias Mtn. B.C. Lat 59°44' Long 137°45'		
TYPE OF MAP: Section 1 - 1' D.D.H. No. 11 Geology		
WORKING PLACE:		
BASED ON:		
DATE OF WORK: Aug 1982	MAP REF. NO.:	FIG. NO.:
DRAWN BY: G.T.	N.T.S. NO.: L14-P-12	052-82-6
DATE: Sept. 1982		



LEGEND

- 1 Limestone calcareous argillite
- 2 Argillite, siltstone
- 3 Undifferentiated flows, tuffs, rare dykes
- 4 Chloritic altered volcanics
- 5 Cherty or siliceous zones
- 6 Gossan
- 7 Sulphides

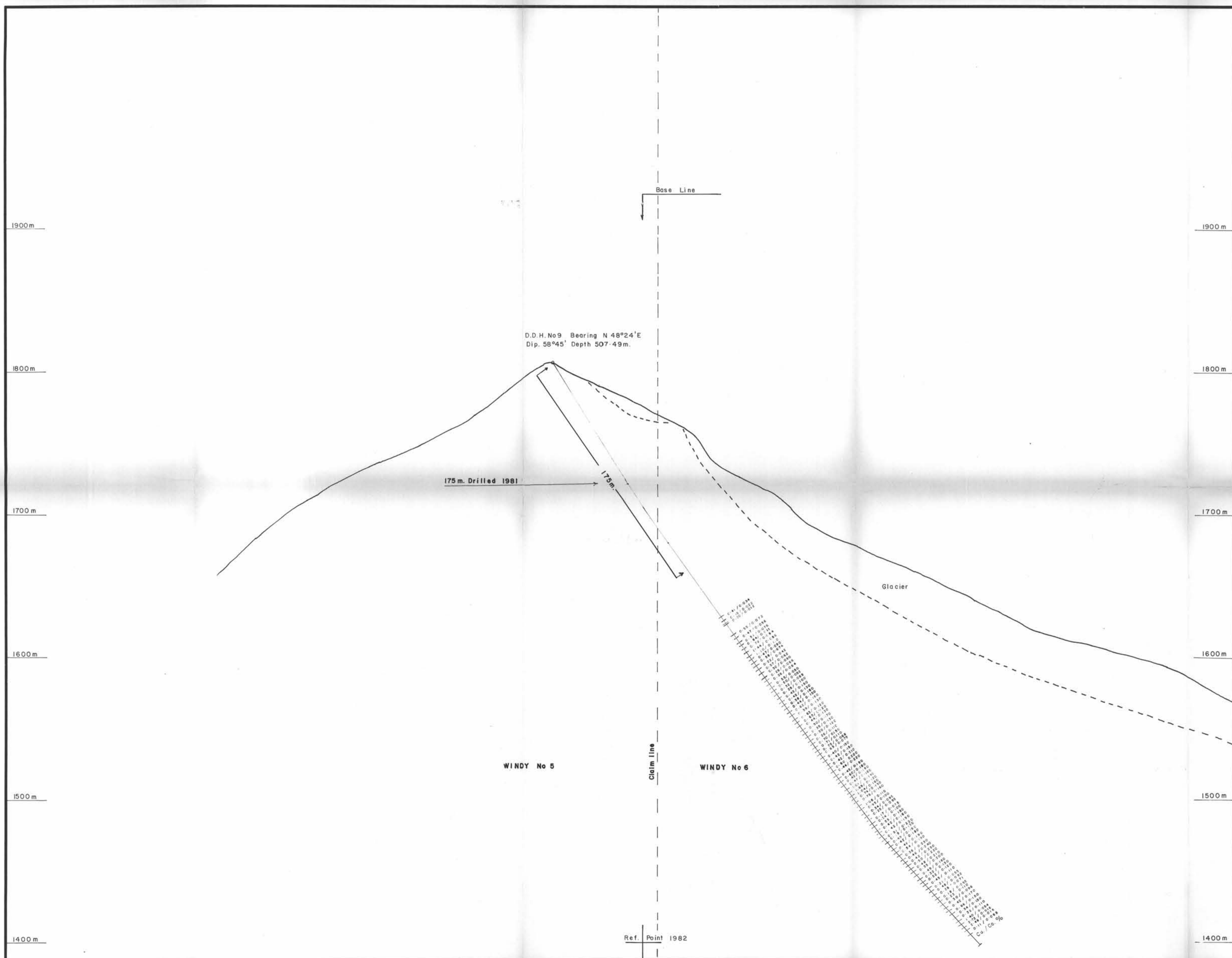
GEOLOGICAL BRANCH  
ASSESSMENT REPORT

**10,946**

SCALE: 1:1250

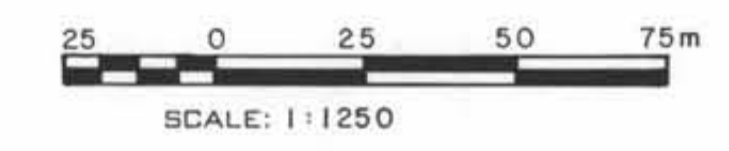
<b>FALCONBRIDGE LIMITED</b>		
PROPERTY:		
WINDY - CRAGGY		
LOCATION:		
St. Elias Mtn. B.C. Lat. 59°44' Long. 137°45'		
TYPE OF MAP:		
Section M-M' D.D.H. No.12 Geology		
WORKING PLACE:		
BASED ON:		
DATE OF WORK: Aug. 1982	MAP REF. NO.:	FIG. NO.:
DRAWN BY: G.T.		
DATE: Aug. 1982	N.T.S. NO.: 114-P-12	052-82-7



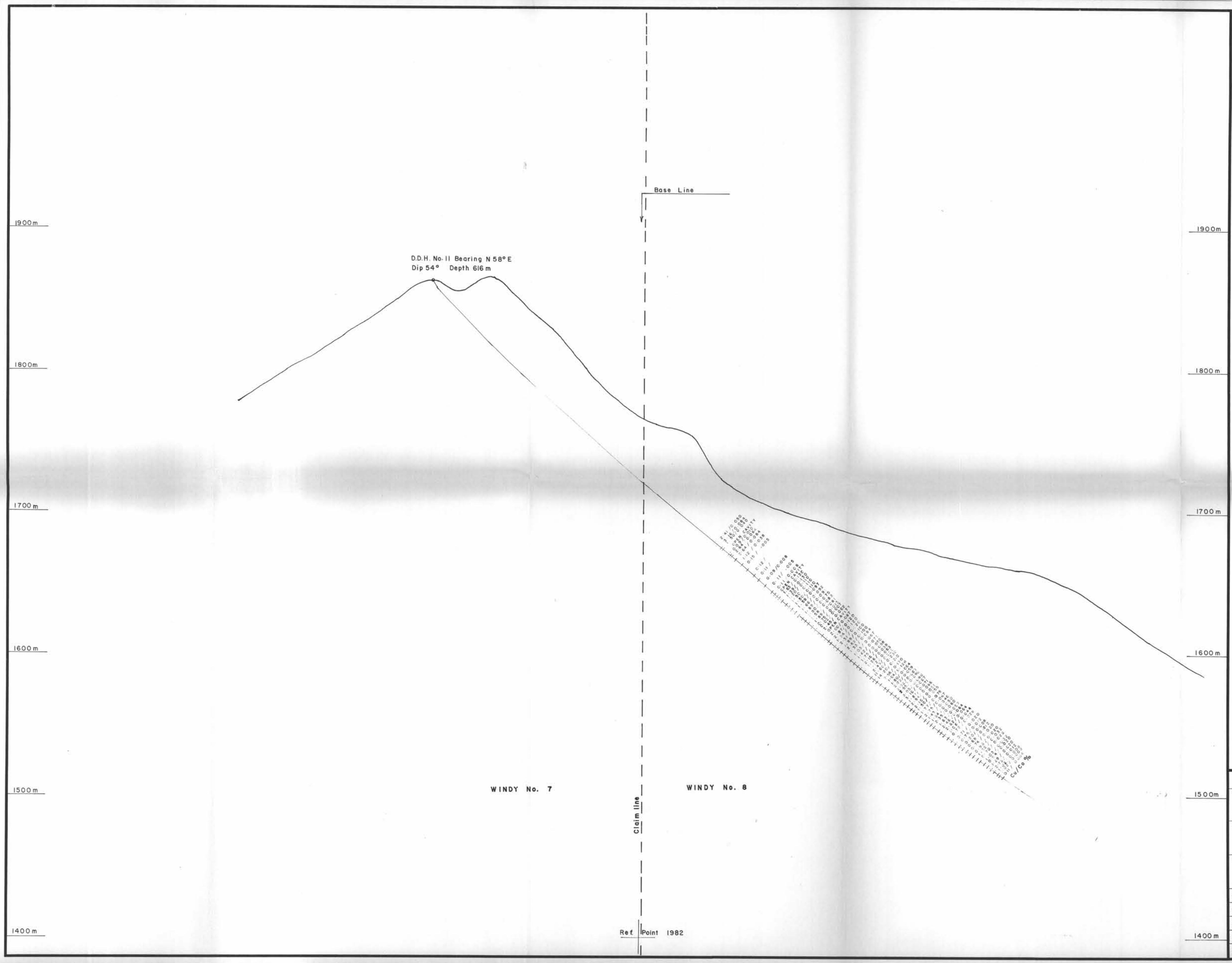


**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

# 10,946

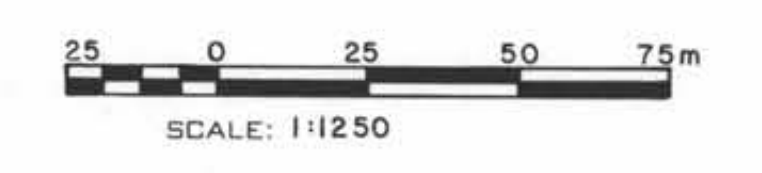


<b>FALCONBRIDGE LIMITED</b>		
PROPERTY: WINDY - CRAGGY		
LOCATION: St. Elias Mtn. B.C. Lat. 59°44' Long. 137°45'		
TYPE OF MAP: Section G - 6' D.D.H. No 9		
WORKING PLACE:		
BASED ON:		
DATE OF WORK: Aug. 1982	MAP REF. NO.:	FIG. NO.:
DRAWN BY: G.T.		
DATE: Sept. 1982	N.T.S. NO.: 114-P-12	05282-8

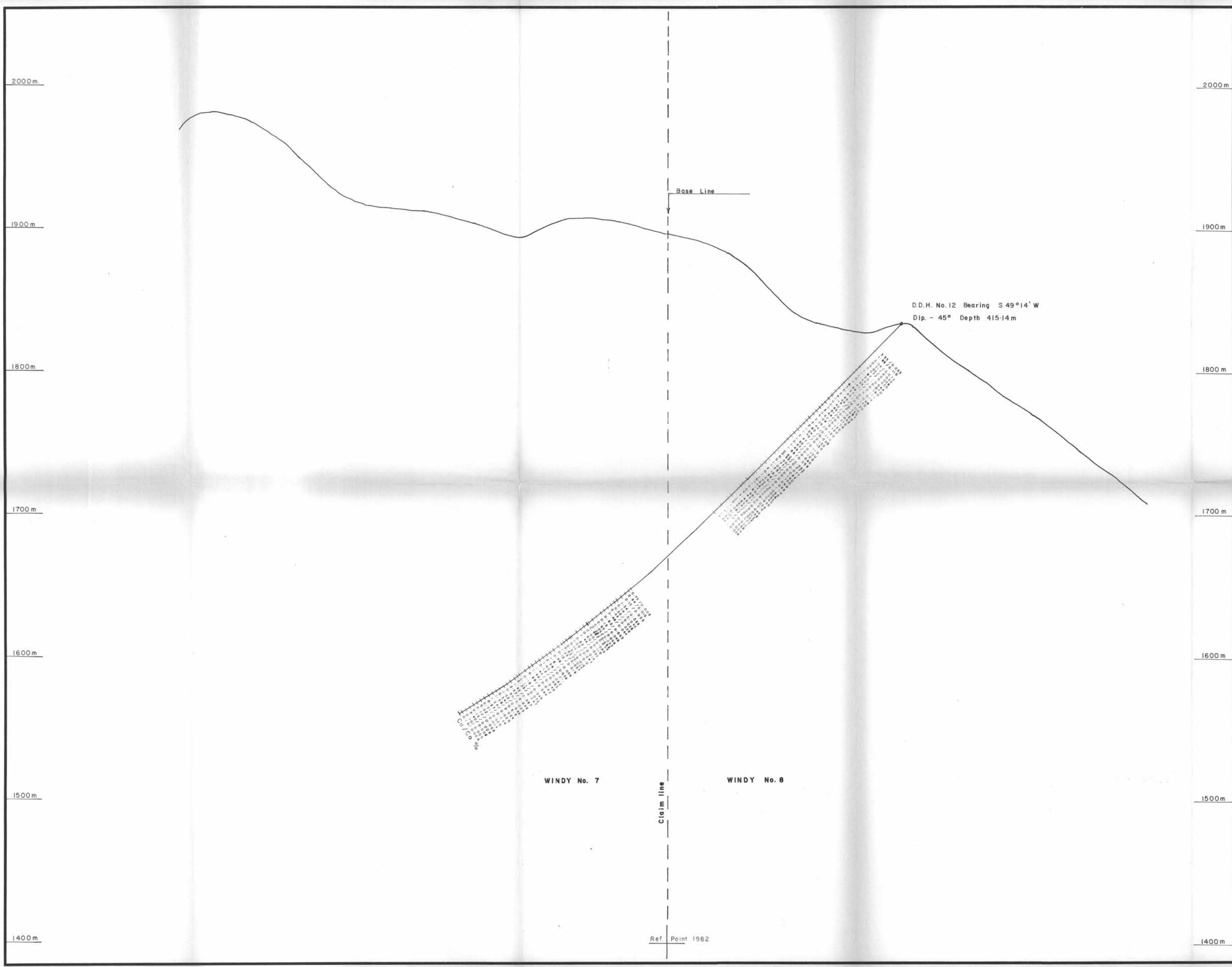


**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**10,946**

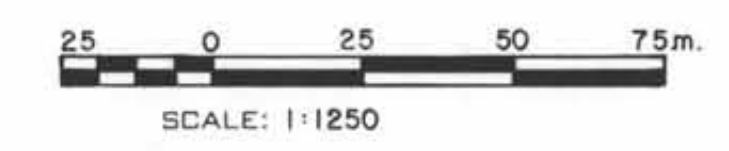


<b>FALCONBRIDGE LIMITED</b>		
PROPERTY:	WINDY - CRAGGY	
LOCATION:	St. Elias Mtn. B.C. Lat. 59°44' Long. 137°45'	
TYPE OF MAP:	Section 1 - 1' D.D.H. No. 11	
WORKING PLACE:		
BASED ON:		
DATE OF WORK: Aug. 1982	MAP REF. NO.:	FIG. NO.:
DRAWN BY: G. T.		
DATE: Sept. 1982	N.T.S. NO.: 114-P-12	052-82-9



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**10,946**



<b>FALCONBRIDGE LIMITED</b>		
PROPERTY: WINDY - CRAGGY		
LOCATION: St. Elias Mtn. B.C. Lat 59°44' Long. 137°45'		
TYPE OF MAP: Section M - M' D. D. H. No. 12		
WORKING PLACE:		
BASED ON:		
DATE OF WORK: Aug. 1982	MAP REF. NO.:	FIG. NO.:
DRAWN BY: G.T.		
DATE: Aug. 1982	N.T.S. NO.: 114-P-12	052-82-10

2000m  
1900m  
1800m  
1700m  
1600m  
1500m  
1400m

2000m  
1900m  
1800m  
1700m  
1600m  
1500m  
1400m

WINDY No. 7

WINDY No. 8

Base Line

D.D.H. No. 12 Bearing S 49° 14' W  
Dip - 45° Depth 415.14 m

Ref. Point 1982

Claim line

Cu/Co